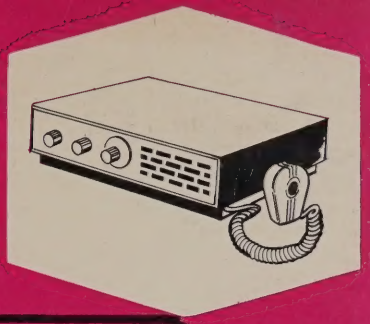
SAMS

PHOTOFACT®

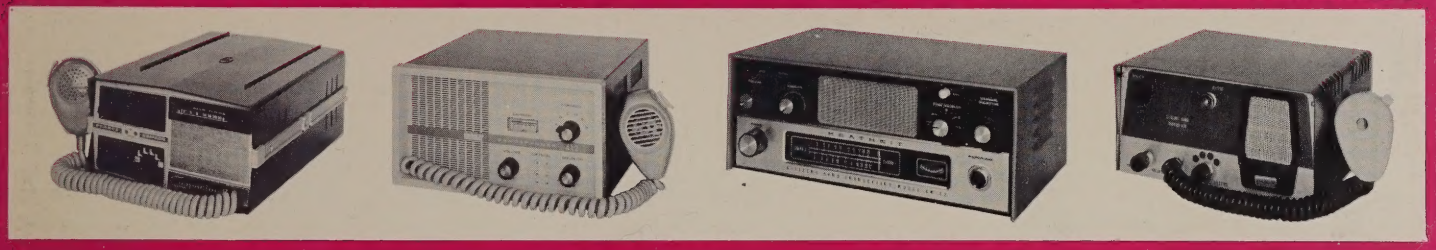


CB RADIO SERIES

CB-6

6

SEPTEMBER 1964



CONTENTS

TRADE NAME AND MODEL	PAGE
ALLSTATE	
893.62910, 893.62911, 893.62921, 893.62931	5
893.62941	12
CADRE	
510-A	20
515	30
GLOBE	
Globe Master 65-220	40
HALLICRAFTERS	
CB-5 Mark II, HA-14, P-5-120	51
HEATH	
GW-32A/D, GWW-32A/D	61
GW-42, GWW-42	69
LAFAYETTE	
HA-100, HB-111	79
HB-115A	89
HB-222	95
PEARCE-SIMPSON	
Companion II	103
Escort	111
RAYTHEON	
Raycom-II	120
Ray-Tel TWR-4	128
REALISTIC	
TRC-8D	136
SONAR	
G	144
WEBSTER	
Bandspanner 412	151

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

$2.95

Cat. No. CB-6

SAMS PHOTOFACT®

CB RADIO SERIES

VOLUME 6

by the Howard W. Sams ENGINEERING STAFF

HOWARD W. SAMS & CO., INC.
INDIANAPOLIS 6, INDIANA

FIRST PRINTING—SEPTEMBER, 1964

CB RADIO SERIES
VOLUME 6

Copyright © 1964 by Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in the United States of America.

Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein.

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed.

Library of Congress Catalog Card Number: 61-18464

NOTICE

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES & REGULATIONS PART 95, SUBPART D, SECTION 95.95)

C B RADIO SERIES

TABLE OF CONTENTS

Model Number	Page
Allstate Models 893.62910, 893.62911, 893.62921, 893.62931	5
Allstate Model 893.62941	12
Cadre Model 510-A	20
Cadre Model 515	30
Globe Model Globe Master 65-220	40
Hallicrafters Models CB-5 Mark II, HA-14, P-5-120	51
Heath Models GW-32A/D, GWW-32A/D	61
Heath Models GW-42, GWW-42	69
Lafayette Models HA-100, HB-111	79
Lafayette Model HB-115A	89
Lafayette Model HB-222	95
Pearce-Simpson Model Companion II	103
Pearce-Simpson Model Escort	111
Raytheon Model Raycom-II	120
Raytheon Model Ray-Tel TWR-4	128
Realistic Model TRC-8D	136
Sonar Model G	144
Webster Model Bandspanner 412	151

Cumulative Index to Prior Volumes 159

TRADE NAME: Allstate Models 893.62910, 893.62911, 893.62921, 893.62931

SUPPLIER: For Current Address, see Master Index

TYPE SET: 8 Tube Transceiver

POWER SUPPLY: 110 — 120 Volts AC, 60 Cycles (or) 12 Volt (or) 6 Volt Storage Battery

RATING: 54 Watts, .64 Amp. @ 117VAC (Receive)
64 Watts, .68 Amp. @ 117VAC (Transmit)
(or) 9 Amp. @ 12VDC (or) 14 Amp. @ 6VDC

TUNING RANGE: Any One CB Channel 1 thru 23

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A8.....GENERAL CEMENT #8606, 9295, 8282
WALSCO #2526, 2543, 2544
A9, A10..... GENERAL CEMENT #5907, 8607, 8727
WALSCO #2515

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage, to point Ⓐ.
Calibrate signal generator to necessary channel frequencies by zero beating with another CB ~~transmitter~~.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 of V2 (Mixer Grid), low side to ground (1650KC Unmod.).	Any	A1, A2, A3, A4, A5, A6	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to ground (27.085MC).	11 (27.085MC)	A7	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPART D, SECTION 95.95).

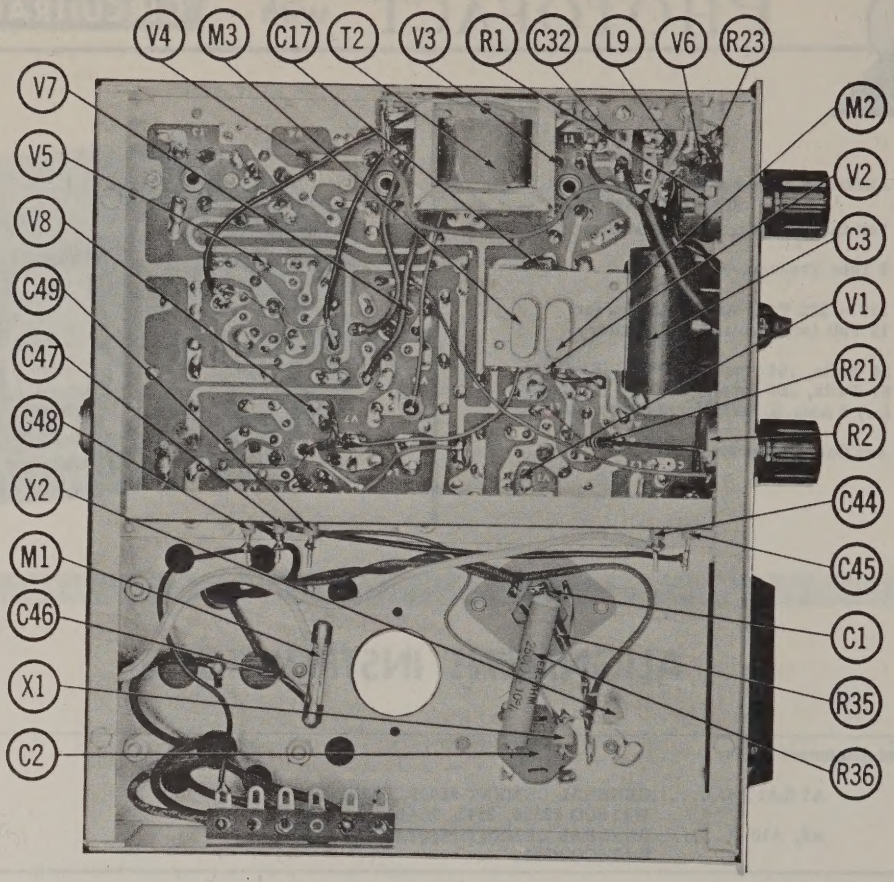
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

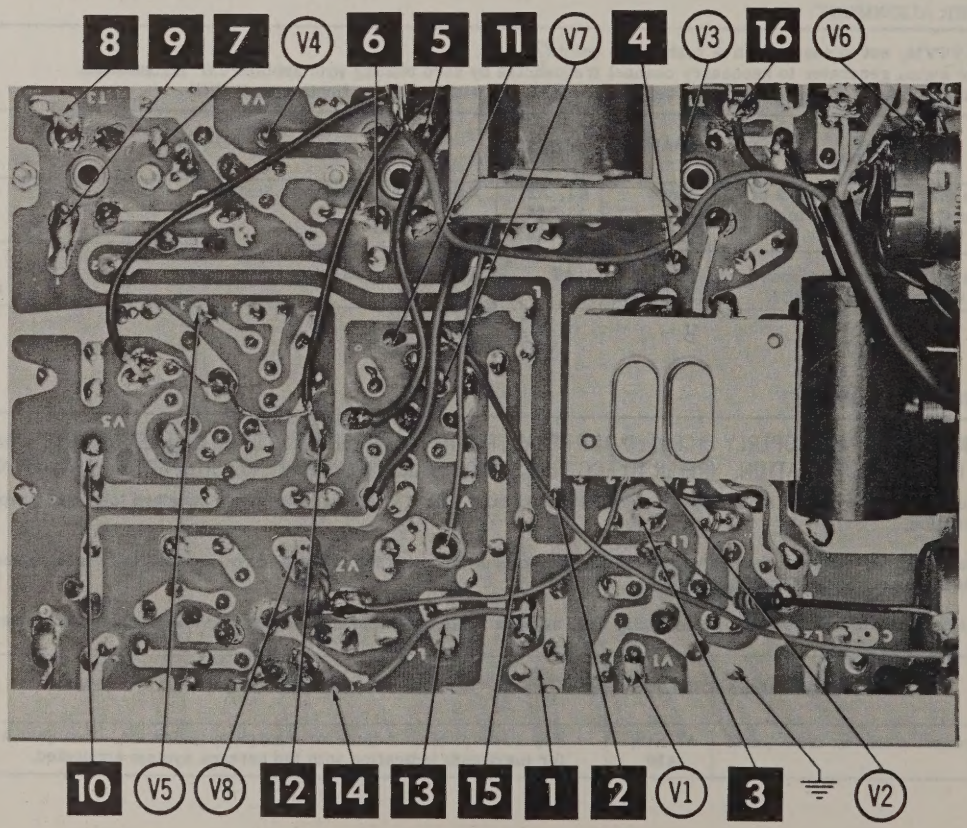
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50Ω dummy load or the normally used antenna system. Set channel selector to the usuable channel nearest channel 11 (27.085MC).

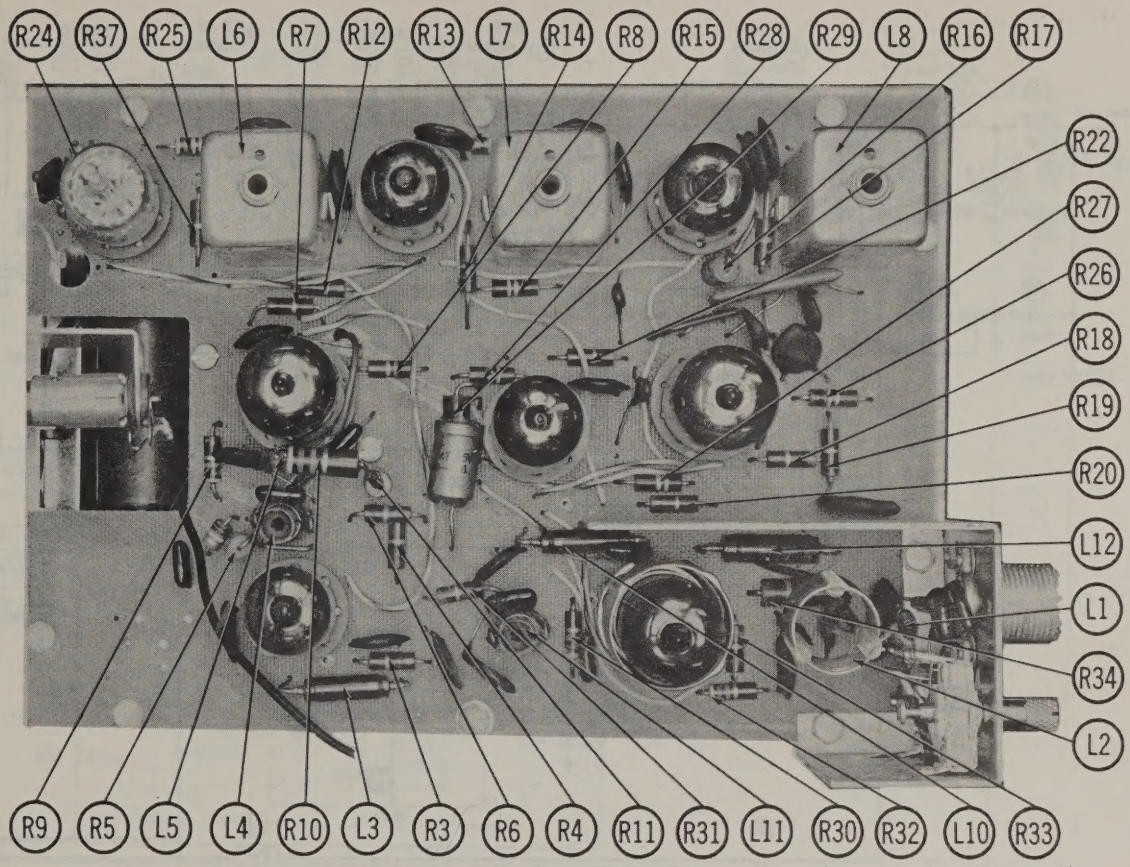
INDICATOR	ADJUST	REMARKS
Field strength meter or front panel indicator	A8, A9, A10	Key transmitter. Adjust for maximum indication. Readjust A9 and A10 for maximum indication with the antenna system connected.

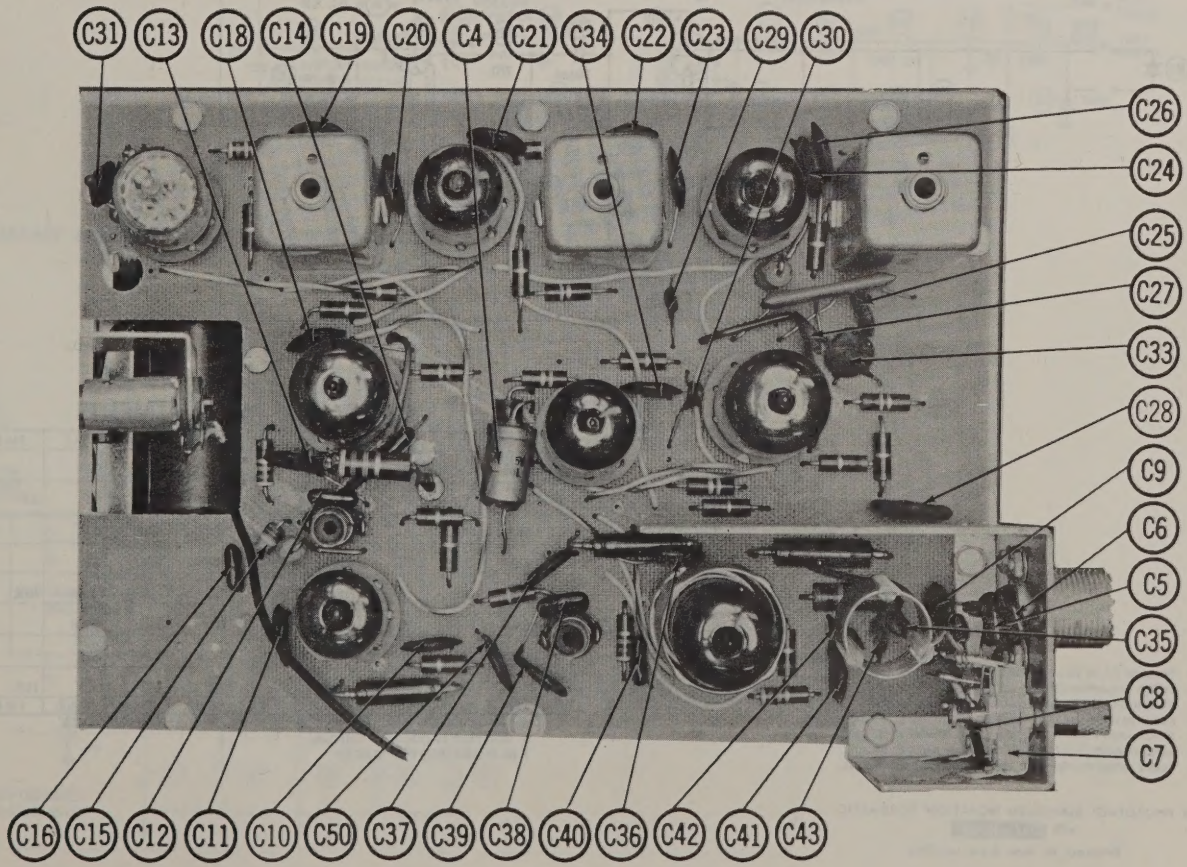
© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY575

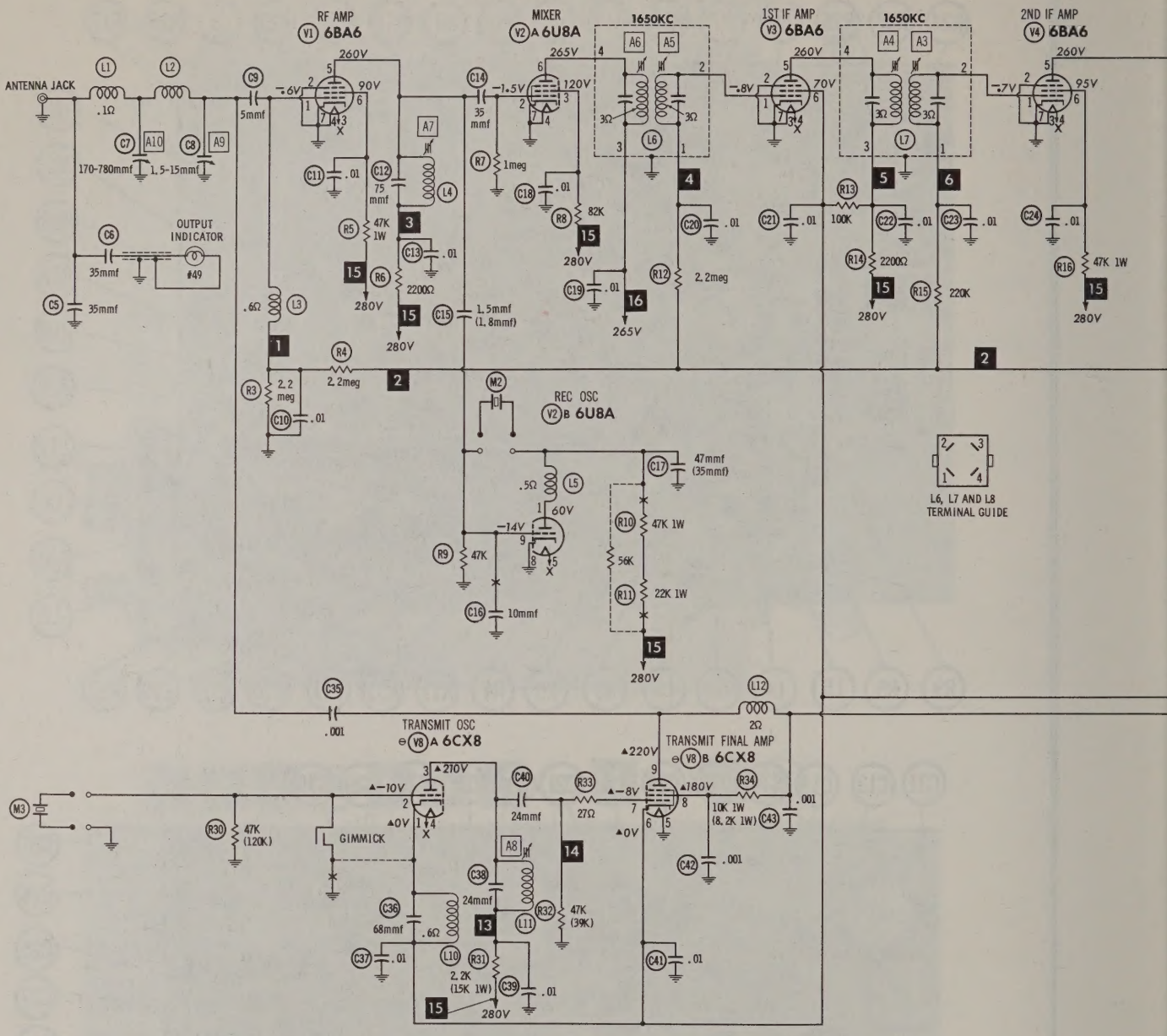




A Howard W. Sams CIRCUITRACE® Photo


R24
R37
R25
L6
R7
R12
R13
L7
R14
R8
R15
R28
R29
L8
R16
R17
R22
R27
R26
R18
R19
R20
L12
L1
R34
L2
R9
R5
L5
L4
R10
L3
R3
R6
R4
R11
R31
L11
R30
R32
L10
R33


C31
C13
C18
C14
C19
C20
C4
C21
C34
C22
C23
C29
C30
C26
C24
C25
C27
C33
C28
C9
C6
C5
C35
C8
C7
C16
C15
C12
C11
C10
C50
C37
C39
C38
C40
C36
C42
C41
C43



RESISTANCE MEASUREMENTS

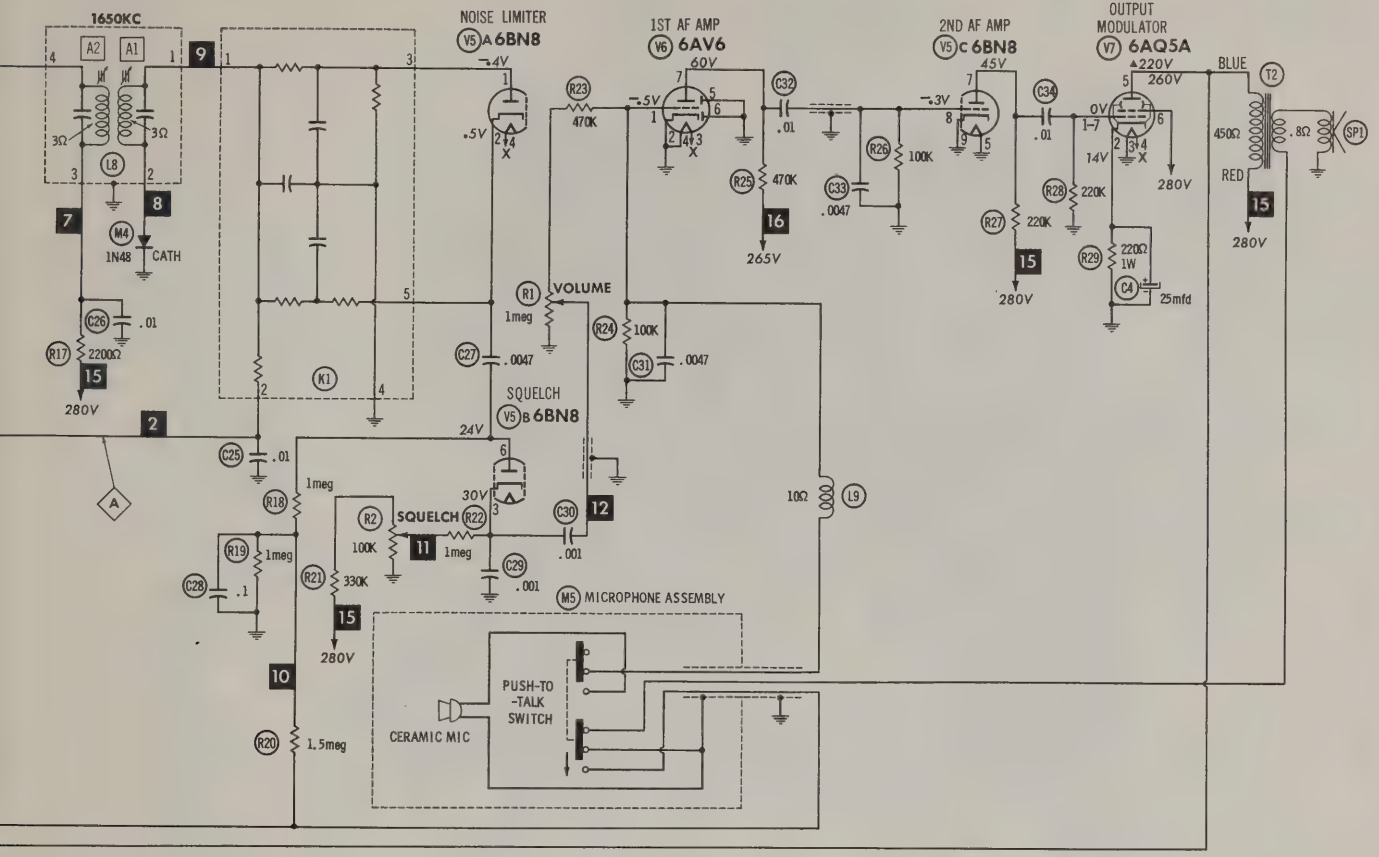
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	1.4meg	0Ω	FIL	FIL	†2400Ω	†47K	0Ω		
V2	6U8A	†69K	1meg	†82K	FIL	FIL	†2400Ω	0Ω	0Ω	47K
V3	6BA6	3meg	0Ω	FIL	FIL	†2400Ω	†100K	0Ω		
V4	6BA6	1meg	0Ω	FIL	FIL	†2400Ω	†47K	0Ω		
V5	6BN8	100K	2meg	1meg	FIL	FIL	1.7meg	†220K	100K	0Ω
V6	6AV6	85K	0Ω	FIL	FIL	0Ω	0Ω	†470K		
V7	6AQ5A	220K	220K	FIL	FIL	†710Ω	†260Ω	220K		
V8	6CX8	▲.6Ω	47K	†2400Ω	FIL	FIL	▲0Ω	47K	†10K	†710Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

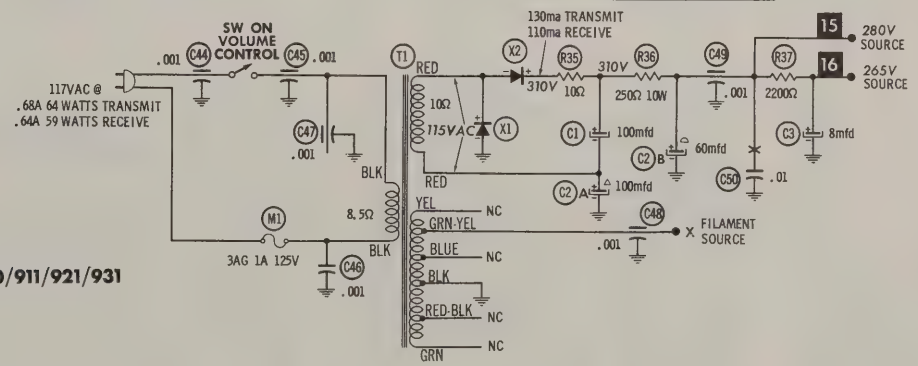
ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN TRANSMIT POSITION.
† MEASURED FROM OUTPUT OF X2.

⊖ See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

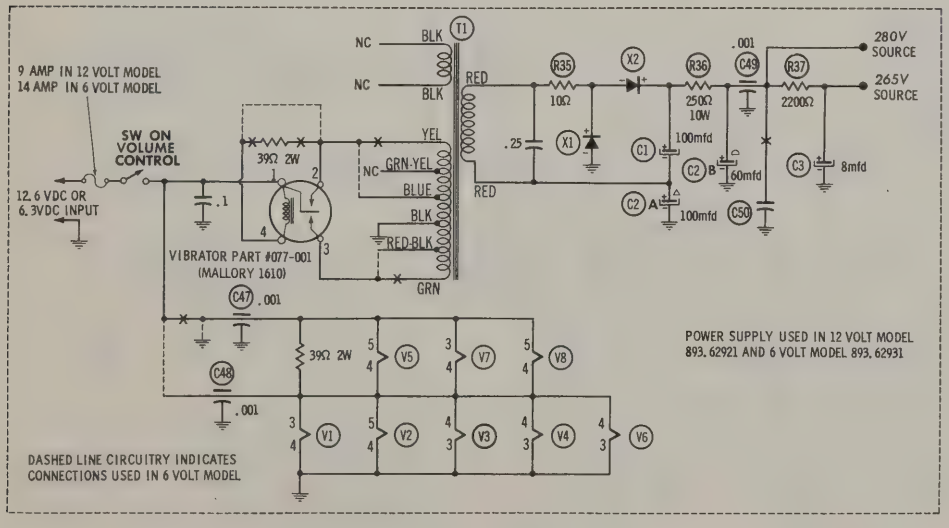
A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE

©Howard W. Sams & Co., Inc, 1964





ALLSTATE MODELS 893.62910/911/921/931


9 AMP IN 12 VOLT MODEL
14 AMP IN 6 VOLT MODEL
SW ON VOLUME CONTROL
12.6 VDC OR 6.3VDC INPUT
VIBRATOR PART #077-001
(MALLORY 1610)
280V SOURCE
265V SOURCE
DASHED LINE CIRCUITRY INDICATES CONNECTIONS USED IN 6 VOLT MODEL
POWER SUPPLY USED IN 12 VOLT MODEL 893.62921 AND 6 VOLT MODEL 893.62931

PARTS LIST AND DESCRIPTION

TUBES

ITEM No.	USE	TYPE (◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆)
V1	RF Amp.	6BA6
V2	Mixer-Receive Osc.	6U8A
V3	1st IF Amp.	6BA6
V4	2nd IF Amp.	6BA6
V5	Noise Limiter-Squelch-2nd AF Amp.	6BN8
V6	1st AF Amp.	6AV6
V7	Output-Modulator	6AQ5A
V8	Transmit Osc.-Final	6CX8 (6BA8A)*

* Alternate

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS MALLORY PART No.	RECTIFIERS RCA PART No.	RECTIFIERS SARKES TARZIAN PART No.
X1	130MA	015-002	A500 or VB500	1N2862 or 1N2863	F4 or 40H
X2	130MA	015-002	A500 or VB500	1N2862 or 1N2863	F4 or 40H

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ALLSTATE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	100	250	060-004	AFH1-31-25	AA0267	XC1-11		FP129.1A	TVL-1535
				TU-3	28521-6	1T7		CE-7	HKT-3
C2A	▲100	250	060-003	AFH3-29-70	CC0237				TVL-2639
B	▲60	350							
C3	8	350	060-002	PRS-1610	BR-8-350	QT1-4	TD-8-350	TC61	TVA-1603
C4	25	25	060-001	PTT82	NLW25-25	MT1-11	MLV25-25	TT25X25	TE-1207

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	35		ADM-15-360	CPR-36J	CD10E360J	DM-10-360K		MS-436
C6	35		ADM-15-360	CPR-36J	CD10E360J	DM-10-360K		MS-436
C7	170-780	#041-002				S-469		
C8	1.5-15	#041-001				460		
C9	5		ADM-15-050	D6-050	CD10C050K	DM-10-050K	MCB205	MS-55
C10	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C11	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C12	75		ADM-15-750	CPR-75J	CD10F750J	DM-10-750K	MCB230	MS-475
C13	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C14	35		ADM-15-360	CPR-36J	CD10E360J	DM-10-360K		MS-436
C15	1.5	(1.8) †	RICC21COK159C	TCZ-1R5	C10V5C		CNO315	10TCC-V15
C16	10		ADM-15-100	CPR-10J	CD10E10J	DM-10-100K		MS-410
C17	47	(35) †	ADM-15-470	CPR-47J	CD10E470J	DM-10-470K	MCB224	MS-447
C18	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C19	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C20	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C21	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C24	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C25	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C27	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C28	.1		TTD- 1	DDA-104	H6	1DP-2-104	TA010	TH-P10
C29	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C30	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C31	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C32	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C33	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C35	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C36	68		ADM-15-680	CPR-68J	CD10F680J	DM-10-680K		MS-468
C37	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C38	24		ADM-15-240	CPR-24J	CD10E240J	DM-10-240K	MCB220	MS-424
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C40	24		ADM-15-240	CPR-24J	CD10E240J	DM-10-240K	MCB220	MS-424
C41	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C42	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C43	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C44	.001		EF-001	MFT-1000		CCF-102	CT280A	
C45	.001		EF-001	MFT-1000		CCF-102	CT280A	
C46	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C47	.001		EF-001	MFT-1000		CCF-102	CT280A	
C48	.001		EF-001	MFT-1000		CCF-102	CT280A	
C49	.001		EF-001	MFT-1000		CCF-102	CT280A	
C50	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

\# Allstate Part Number.
† Alternate Value.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA ALLSTATE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	500K	070-002	F2-500K, SU204, KR4 or (B-60, KR4)	A47-500K-Z, FS-3, SWE-13	Q13-133, 76-1, or (BU2, CF25, SS14, GC)*	UA55A, SF1000, US41 or (RU55A, SL38, SF1000, US41) or (U48, US26)
R2	Squelch	100K	070-001	F1-100K, SU204 or (B-40)	A47-100K-S, FS-3	Q11-128 or (BU2, CF13, SS14, DC1)*	UA15L, SF1000 or (RU15L, SL38, SF1000) or (U41)

* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN PART No.	REMARKS
R36	250Ω 10W	PW10-250	10W-SQ-250	#100-001

\# Allstate Part Number.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN PART No.	REMARKS

TRANSFORMER (POWER)

ITEM No.	RATING PRI. 1	RATING PRI. 2	RATING PRI. 3	REPLACEMENT DATA ALLSTATE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	NOTES
T1	117VAC @ .68A	12.6VCT Not Used	6.3VCT Not Used	085-001					
	SEC. 1	SEC. 2							
	115VAC @ .42A (AC)	6.3VAC @ 3.3A							

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA ALLSTATE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	NOTES
T2	5000Ω	3-4Ω	087-001					

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		ALLSTATE PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (.47uh)	030-005	TV-239	4588	RTC-8513	T958	
L2	Final Tank	080-004					
L3	RF Choke (5.6uh)	030-003		74F566AP	RTC-8519	T820	
L4	RF	080-001					
L5	RF Choke (4.7uh)	030-004		74F476AP		T819	
L6	1st IF (1650KC)	086-001					
L7	2nd IF (1650KC)	086-001					
L8	3rd IF (1650KC)	086-001					
L9	RF Choke (500uh)	030-001	TV-203	6174	RTC-8592	T975	
L10	RF Choke (5.6uh)	030-003		74F566AP	RTC-8519	T820	
L11	Trans. Osc.	080-003					
L12	RF Choke (15uh)	030-002		72F155AP		T862	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ALLSTATE PART NO.	REPLACEMENT DATA
K1	Noise Limiter-AVC		090-001	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ALLSTATE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1 Amp 125V	027-001		315001.		MDV 1	

MISCELLANEOUS

ITEM No.	PART NAME	ALLSTATE PART No.	NOTES
M2	Crystal		Receive (Specify Channel)
M3	Crystal		Transmit (Specify Channel)
M4	Diode (1N48)	015-001	Det.-AVC
M5	Microphone Ass'y.	068-001	Includes Push-to-talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

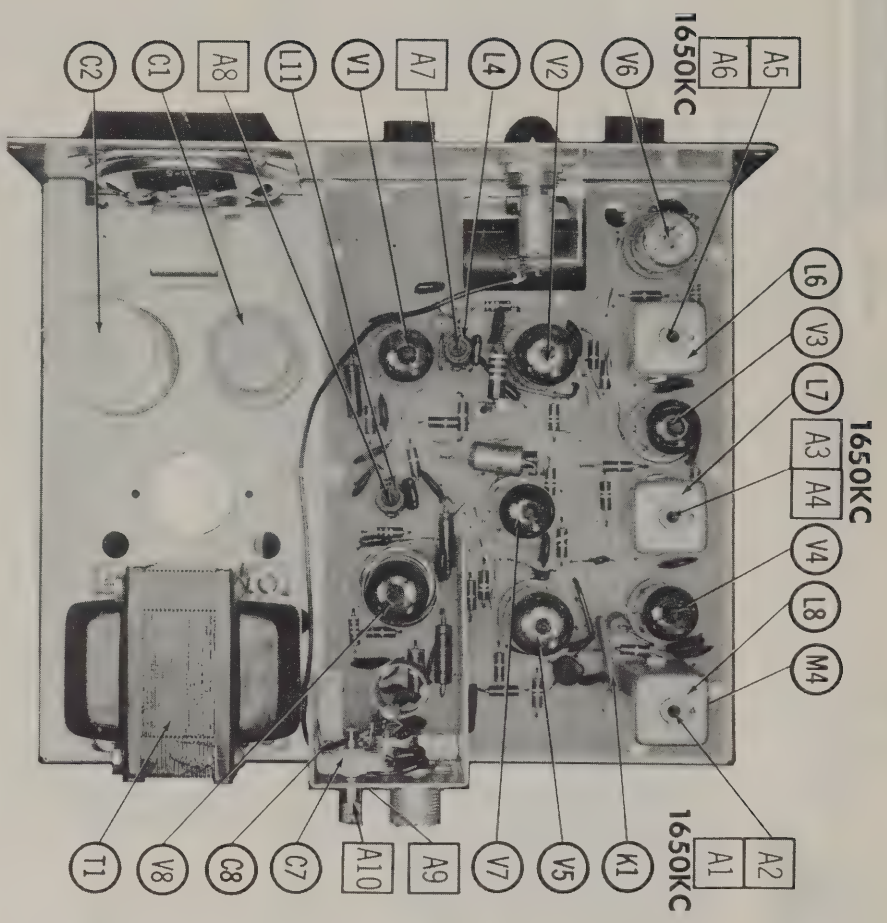
ITEM	PART No.
Knobs	047-002

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA	
		ALLSTATE PART No.	QUAM PART No.
SP1	3" x 4" PM 3-4Ω	067-001	

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors
		8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type)
		8237 Low Loss (RG-8/U)
		8240 (Solid) Miniature (RG-58/U)
		8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor-1 Shielded for Press-to-Talk (Neoprene)
		8496 3 Conductor-1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)



TRADE NAME: Allstate Model 893.62941

SUPPLIER: For Current Address, see Master Index

TYPE SET: 8 Tube Transceiver

POWER SUPPLY: 110 - 120 Volts AC, 60 Cycles (or)
12 Volt (or) 6 Volt Storage Battery

RATING: 60 Watts, .64 Amp. @ 117VAC (Receive)
65 Watts, .68 Amp. @ 117VAC (Transmit)
6 Amp. @ 12VDC (Receive)
6.6 Amp. @ 12VDC (Transmit)
11.5 Amp. @ 6VDC (Receive)
12 Amp. @ 6VDC (Transmit)

TUNING RANGE: Any 4 CB Channels 1 thru 23

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:
A1 thru A6, A9, A10... GENERAL CEMENT #5907, 8607, 8727
WALSCO #2515
A7, A8..... GENERAL CEMENT #8606, 9295, 8282
WALSCO #2526, 2543, 2544

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage, to point Ⓐ.
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 of V2 (Mixer Grid), low side to ground (1650KC Unmod.).	Any	A1, A2, A3, A4, A5, A6	Adjust for maximum indication.
High side thru .1mfd to antenna jack low side to ground (27.085MC Unmod.).	11 (27.085MC)	A7	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPART D, SECTION 95.95).

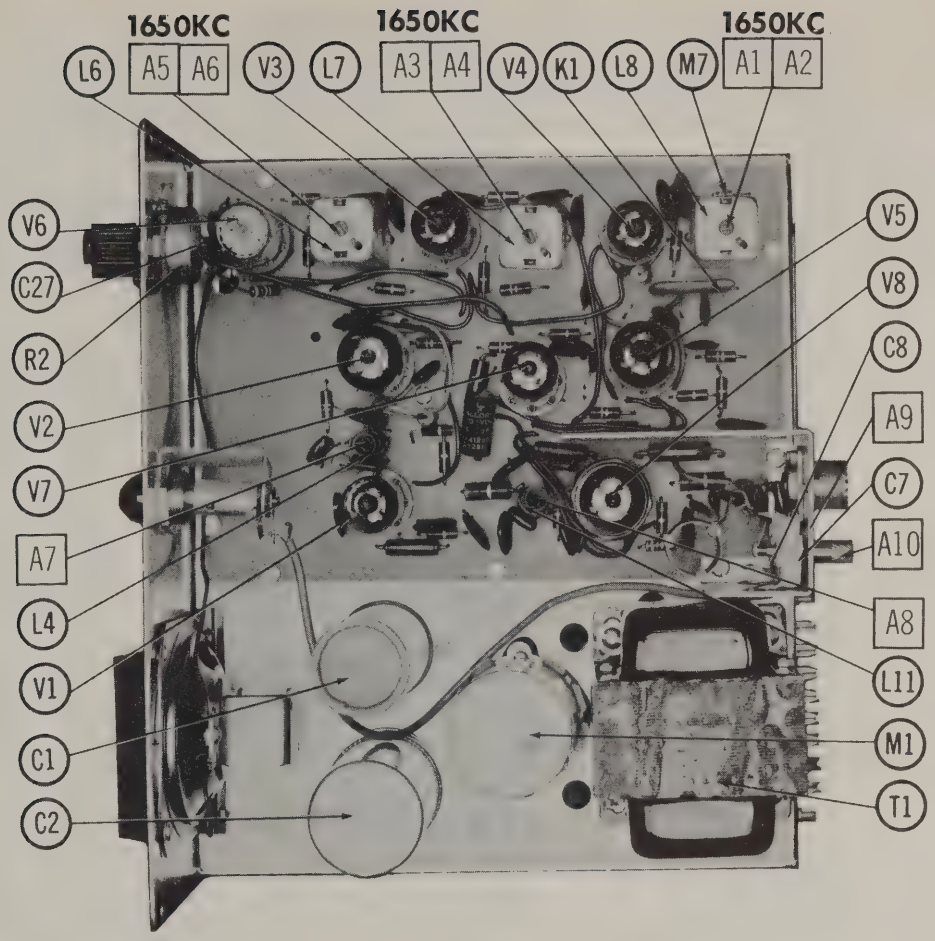
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50Ω dummy load or the normally used antenna system. Set channel selector to the usuable channel nearest channel 11 (27.085MC).

INDICATOR	ADJUST	REMARKS
Field strength meter or front panel indicator.	A8, A9, A10	Key transmitter. Adjust for maximum indication Readjust A9 and A10 for maximum indication with the antenna system connected.

© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY576



PARTS LIST AND DESCRIPTION

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V1	RF Amp.	6BA6
V2	Mixer-Receive Osc.	6U8A
V3	1st IF Amp.	6BA6
V4	2nd IF Amp.	6BA6
V5	Noise Limiter-Squelch-2nd AF Amp.	8BN8
V6	1st AF Amp.	6AV6
V7	Output-Modulator	6AQ5A
V8	Transmit Osc.-Final	6CX8

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	130MA	015-006	VB500 or A500*	1N2862* or 1N2863*	F4* or 40H*

* Use two units.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	ALLSTATE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	100	250	060-004	AFH1-31-25 TU-3	AA026T 28521-6	XC1-11 1T7		FP129.1A CE-7	TVL-1535 HKT-3 TVL-2639
C2A	▲100	250	060-003	AFH3-29-70	CC0237				
B	▲60	350							
C3	8	350	060-002	PRS-1610	BR-8-350	QT1-4	TD-8-350	TC61	TVA-1603
C4	25	25	060-001	PTT82	NLW25-25	MT1-11	MLV25-25	TT25X25	TE-1207

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	35		ADM-15-360	CPR-36J	CD10E360J	DM-10-360K		MS-436
C6	35		ADM-15-360	CPR-36J	CD10E360J	DM-10-360K		MS-436
C7	170-780	#041-002				S-469		
C8	1.5-15	#041-001				460		
C9	5		ADM-15-050	D6-050	CD10C050K	DM-10-050K	MCB205	MS-55
C10	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C11	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C12	75		ADM-15-750	CPR-75J	CD10F750J	DM-10-750K	MCB230	MS-475
C13	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C14	35		ADM-15-360	CPR-36J	CD10E360J	DM-10-360K		MS-436
C15	2	(1.5) †		DTZ-2R2	CD10C020M	DM-10-020K	CNO522	10TCC-V22
C16	68		ADM-15-680	CPR-68J	CD10F680J	DM-10-680K		MS-468
C17	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C18	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C19	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C20	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C21	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C24	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C25	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C26	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C27	.05		BPD-05	DDA-503	H5	1DP-2-503	TA-150	TH-S50
C28	.1		TTD-1	DDA-104	H6	1DP-2-104	TA-010	TH-P10
C29	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C30	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C31	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C32	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C33	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C35	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C36	68		ADM-15-680	CPR-68J	CD10F680J	DM-10-680K		MS-468
C37	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C38	24		ADM-15-240	CPR-24J	CD10E240J	DM-10-240K	MCB220	MS-424
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C40	24		ADM-15-240	CPR-24J	CD10E240J	DM-10-240K	MCB220	MS-424
C41	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C42	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C43	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C44	.001		EF-001	MFT-1000		CCF-102	CT280A	
C45	.001		EF-001	MFT-1000		CCF-102	CT280A	
C46	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C47	.001		EF-001	MFT-1000		CCF-102	CT280A	
C48	.001		EF-001	MFT-1000		CCF-102	CT280A	
C49	.001		EF-001	MFT-1000		CCF-102	CT280A	
C50	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C51	.15		P688N-15		PM6P15	6DP-5-154	PVC6015	6PS-P15
C52	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C53	.1		TTD-1	DDA-104	H6	1DP-2-104	TA010	TH-P10

Allstate Part Number.
† Alternate Value

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			ALLSTATE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS–IRC PART No.	MALLORY PART No.
R1	Volume & Switch	500K	070-002	F2-500K,SU204 KR4 or (B-60, KR4)	A47-500K-Z, FS-3,SWE-13	Q13-133, 76-1 or (BU2, CF25, SS14 GC)*	UA55A, SF1000, US41 or (RU55A, SL38, SF1000, US41) or (U-48, US-26)
R2	Squelch	100K	070-001	F1-100K,SU204 or (B-40)	A47-100K-S, FS-3	Q11-128 or (BU2, CF13, SS14, DC1)*	UA15L, SF1000 or (RU15L, SL38, SF1000) or (U-41)

* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS
R36	250Ω 10W	PW10-250	10W-SQ-250	#100-001

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS

Allstate Part Number.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		ALLSTATE PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (.47uh)	030-005	TV-239	4588	RTC-8513	T958	
L2	Final Tank	080-004					
L3	RF Choke (5.6uh)	030-003		74F566AP	RTC-8519	T820	
L4	RF	080-001					
L5	RF Choke (4.7uh)	030-004		74F476AP		T819	
L6	1st IF (1650KC)	086-001					
L7	2nd IF (1650KC)	086-001					
L8	3rd IF (1650KC)	086-001					
L9	RF Choke (500uh)	030-001	TV-203	6174	RTC-8592	T975	
L10	RF Choke (5.6uh)	030-003		74F566AP	RTC-8519	T820	
L11	Trans. Osc.	080-003					
L12	RF Choke (15uh)	030-002		72F155AP		T862	

PARTS LIST AND DESCRIPTION (CONTINUED)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	PRI. 3	ALLSTATE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .68A	12.6VCT @ 4ADC	6.3VCT @ 8ADC	085-001					
	SEC. 1	SEC. 2							
	115VAC @ .42A (AC)	6.3VAC @ 3.3A							

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	ALLSTATE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	5000Ω	3-4Ω	087-001					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		ALLSTATE PART No.	QUAM PART No.	
SP1	3" x 4" PM 3-4Ω	067-001		

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ALLSTATE PART NO.	REPLACEMENT DATA
K1	Noise Limiter -AVC		090-001	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA			NOTES
				ALLSTATE PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	6V	115v	077-002	5372	1501	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ALLSTATE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2 M3 M4	SFE SFE 3AG	9 Amp. 14 Amp 1 Amp/ 125V	027-001		307009 307014 315001	155009 155014	SFE9 SFE14 MDV1	HHH HDI

MISCELLANEOUS

ITEM No.	PART NAME	ALLSTATE PART No.	NOTES
M5	Crystal		Receive. Specify Channel Number when ordering
M6	Crystal		Transmit. Specify Channel Number when ordering
M7	Diode	015-001	Det.-AVC (1N48)
M8	Switch		Channel Selector. (2-Section 4-Position Wafer)
M9	Microphone Ass'y.	068-003	Includes Push-To-Talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Knobs	047-002
Power Plug	095-008
Power Socket (3 Used)	096-001

ITEM	PART No.
AC Power Cord	BM-105
12 VDC Power Cord	BM-107
6 VDC Power Cord	BM-106
Speaker Bezel	032-001

WIRING DATA

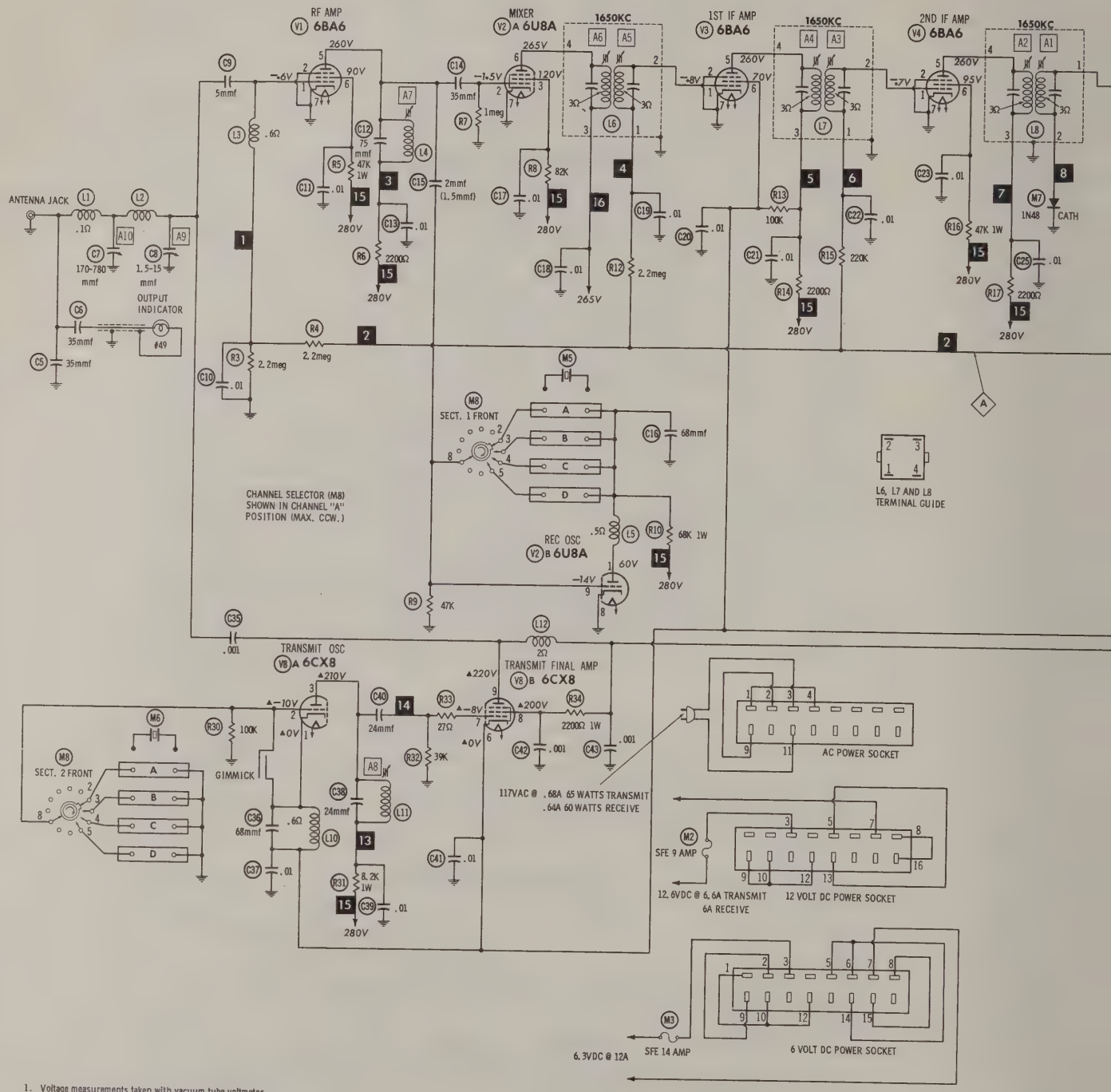
General-use Hook-up Wire .... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors

Shielded Antenna Lead ..... Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)

Coiled Microphone Cable ..... Use BELDEN No. 8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene)
8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)

Ignition Noise Suppression .... Use BELDEN No. 7300-Series Spark-Plug Sets

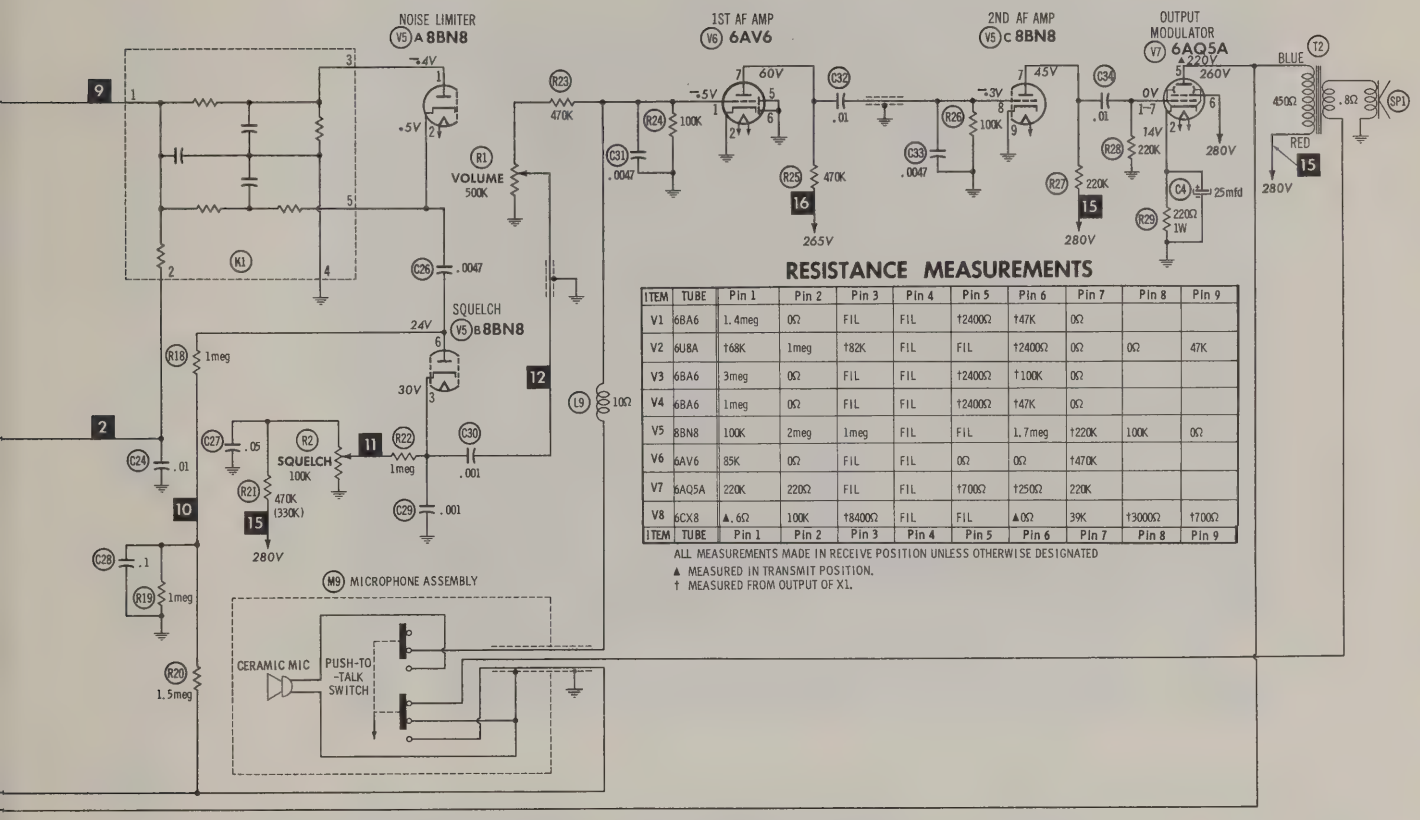
Bonding Strap ..... Use BELDEN No. 8661 (3/8 In.)



1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE

©Howard W. Sams & Co., Inc, 1964



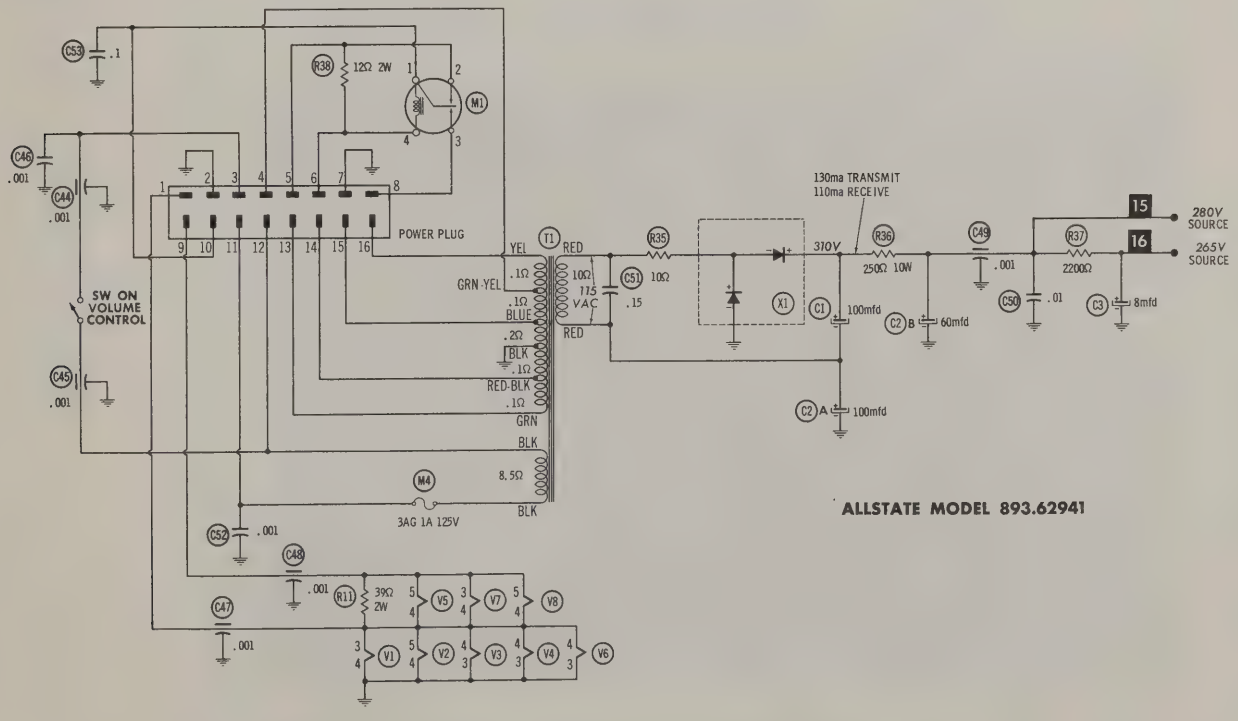
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	1.4meg	0Ω	FIL	FIL	†2400Ω	†47K	0Ω		
V2	6U8A	†68K	1meg	†82K	FIL	FIL	†2400Ω	0Ω	0Ω	47K
V3	6BA6	3meg	0Ω	FIL	FIL	†2400Ω	†100K	0Ω		
V4	6BA6	1meg	0Ω	FIL	FIL	†2400Ω	†47K	0Ω		
V5	8BN8	100K	2meg	1meg	FIL	FIL	1.7meg	†220K	100K	0Ω
V6	6AV6	85K	0Ω	FIL	FIL	0Ω	0Ω	†470K		
V7	6AQ5A	220K	220Ω	FIL	FIL	†700Ω	†250Ω	220K		
V8	6CX8	▲.6Ω	100K	†8400Ω	FIL	FIL	▲0Ω	39K	†3000Ω	†700Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

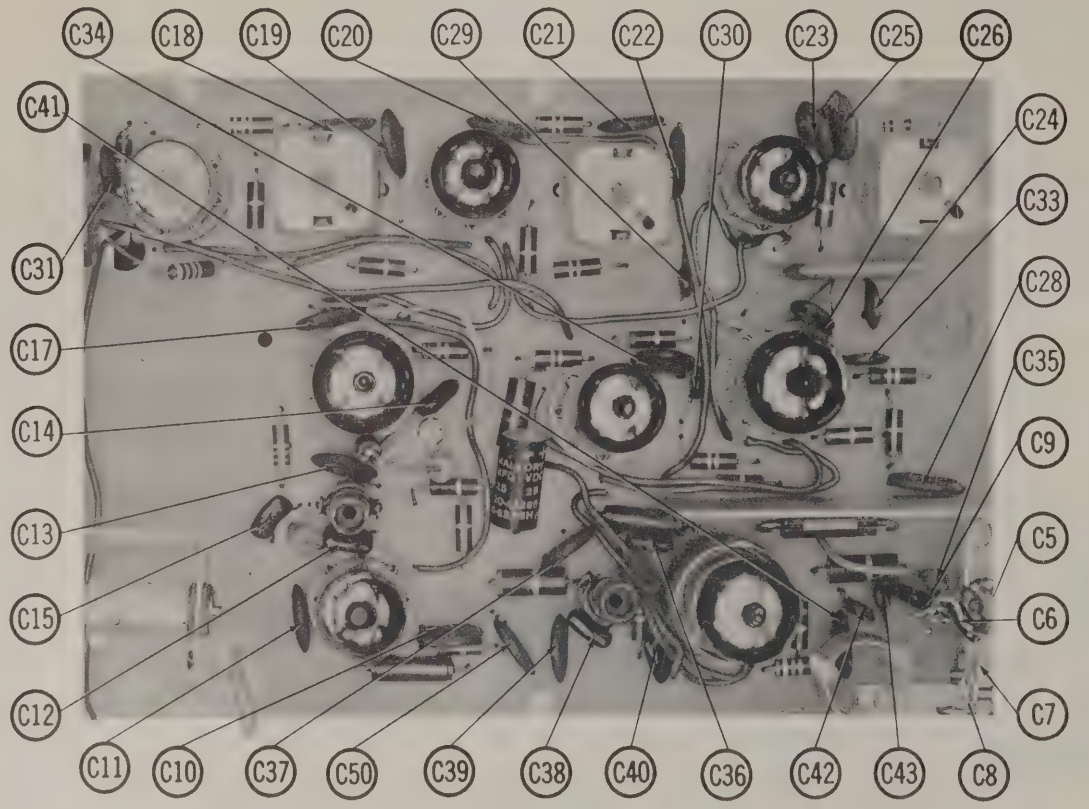
ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED

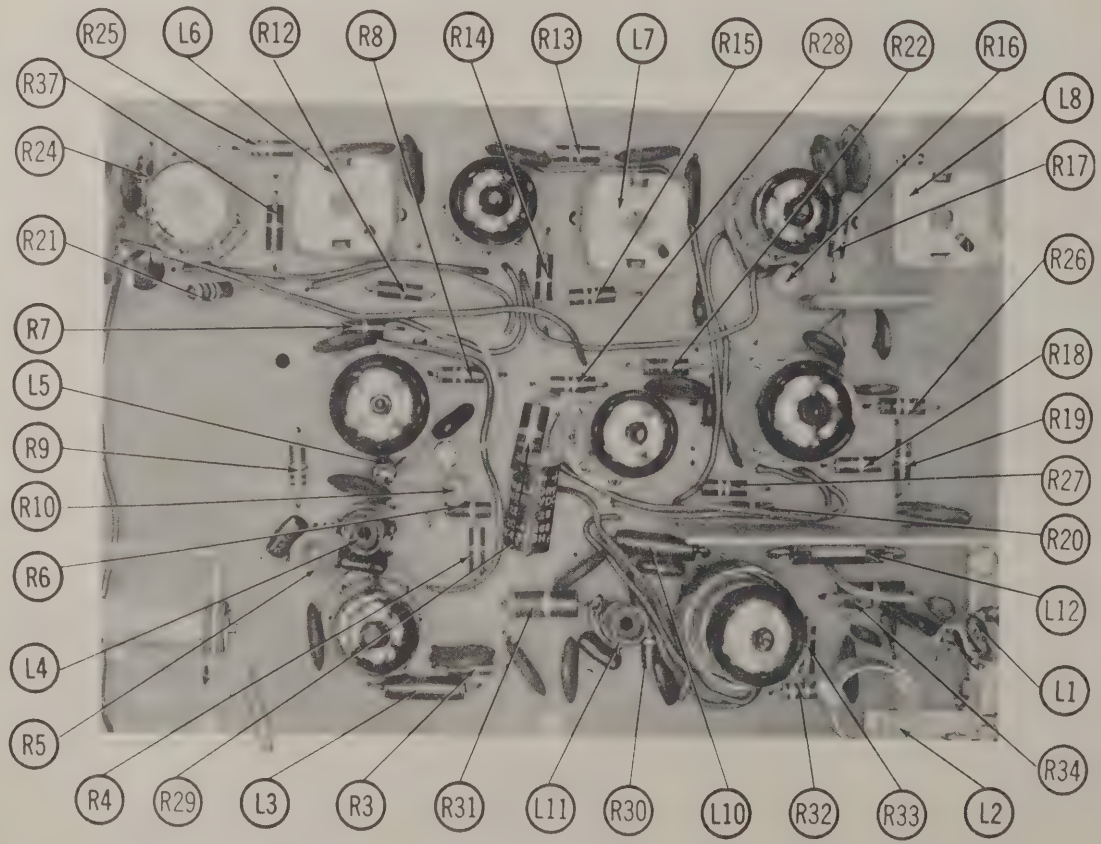
▲ MEASURED IN TRANSMIT POSITION.

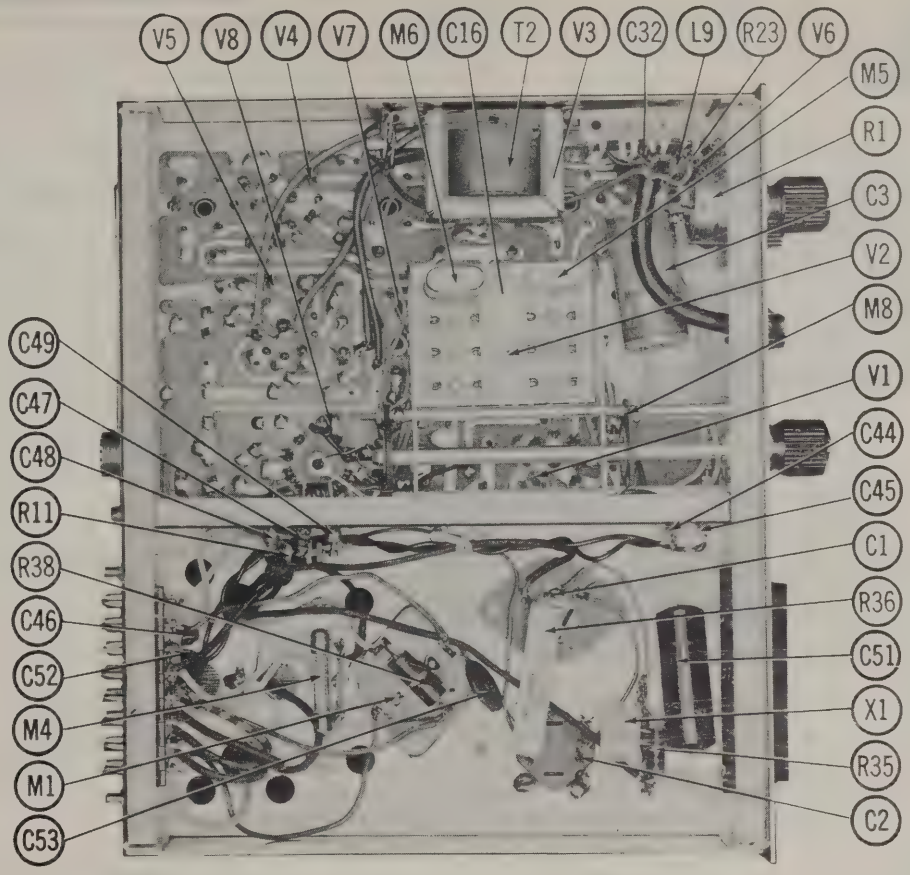
† MEASURED FROM OUTPUT OF X1.

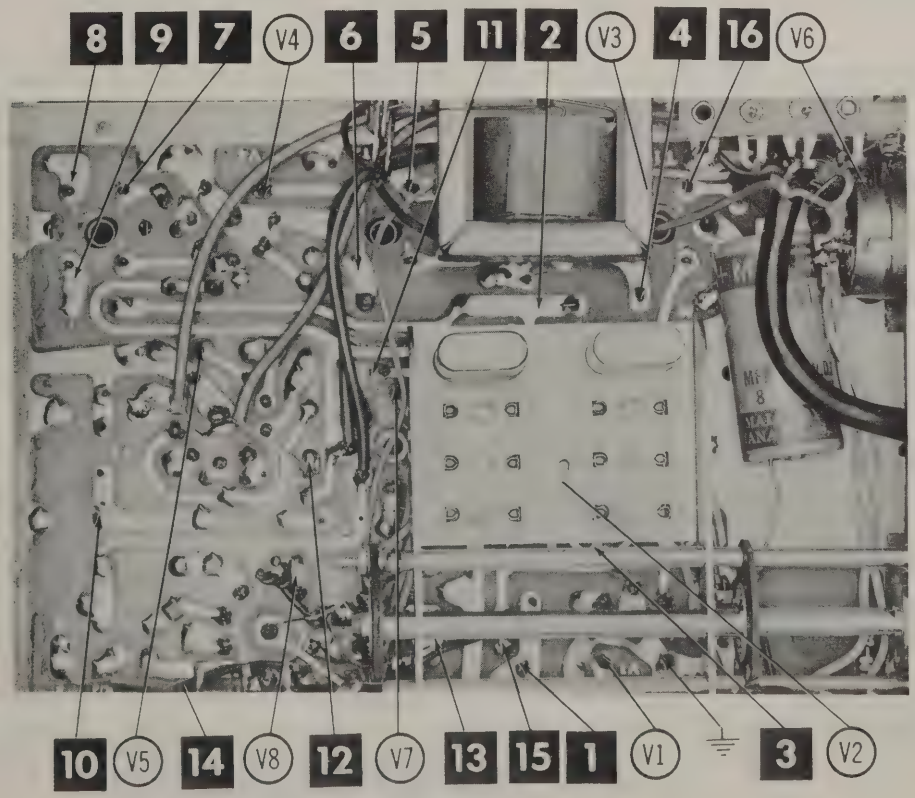


ALLSTATE MODEL 893.62941


C34
C18
C19
C20
C29
C21
C22
C30
C23
C25
C26
C41
C24
C33
C31
C28
C17
C35
C14
C9
C13
C5
C15
C6
C12
C7
C11
C10
C37
C50
C39
C38
C40
C36
C42
C43
C8


R25
L6
R12
R8
R14
R13
L7
R15
R28
R22
R16
R37
L8
R24
R17
R21
R26
R7
R18
L5
R19
R9
R27
R10
R20
R6
L12
L4
L1
R5
R34
R4
R29
L3
R3
R31
L11
R30
L10
R32
R33
L2





A Howard W. Sams CIRCUITRACE® Photo

TRADE NAME:	Cadre Model 510-A
SUPPLIER:	For current address, see Master Index
TYPE SET:	19 Transistor Transceiver
POWER SUPPLY:	110 - 120 Volts AC, 60 Cycles (or) 12 Volt Storage Battery
RATING:	13 Watts, .15 Amp. @ 117VAC (Trans.) 6 Watts, .05 Amp. @ 117VAC (Rec.) .5 Amp. @ 12.6VDC (Trans.) .1 Amp. @ 12.6VDC (Rec.)
TUNING RANGE:	Any 5 CB Channels 1 thru 23 Receiver may be continuously tuned.

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A4, A8, A9, A10.....	GENERAL CEMENT #5009, 8195, 8274 WALSCO #2515, 2516, 2532
A5, A6, A7, A11, A12, A13, A14.....	GENERAL CEMENT #8282, 8606, 8606L WALSCO #2526, 2541, 2542

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage, to "Det." terminal on rear terminal board.
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .1mfd to base of X4 (2nd Mixer), low side to ground. (455KC Unmod.)	Any	A1, A2, A3	Adjust for maximum indication with xtal.-tune switch (M13) in xtal. position.
High side thru .1mfd to base of X2 (1st Mixer), low side to ground. (1680KC Unmod.)	Any	A4	Adjust for maximum indication with xtal.-tune switch (M13) in xtal. position.
High side thru .1mfd to antenna jack low side to ground (27.085MC Unmod).	11 (27.085MC)	A5, A6, A7	Adjust for maximum indication with xtal.-tune switch (M13) in either position.
High side thru .1mfd to antenna jack, low side to ground. (27.255MC Unmod.)	23 (27.255MC)	A8	Adjust for maximum indication with xtal.-tune switch (M13) in tune position and tuning dial set to channel 23.
High side thru .1mfd to antenna jack, low side to ground (26.965MC Unmod.)	1 (26.965MC)	A9	Adjust for maximum indication with xtal.-tune switch (M13) in tune position and tuning dial set to channel 1.
High side thru .1mfd to antenna jack, low side to ground (27.085MC Unmod.)	11 (27.085MC)	A10	Adjust for maximum indication with xtal.-tune switch (M13) in tune position and tuning dial set to channel 11.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

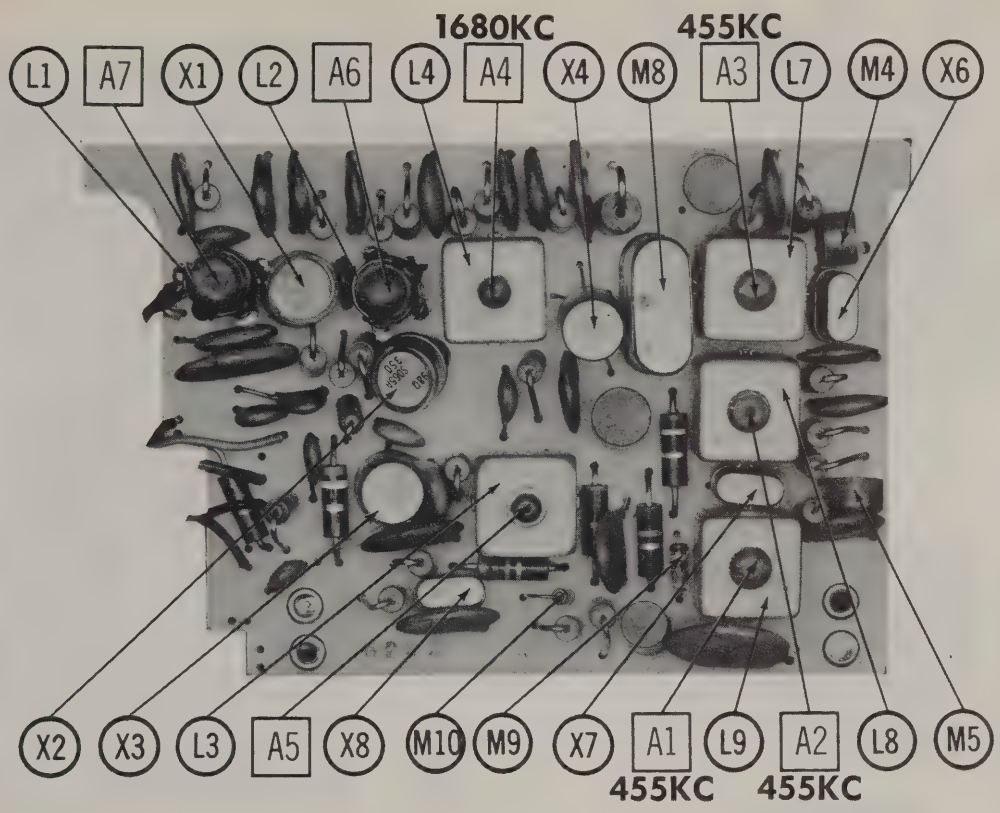
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

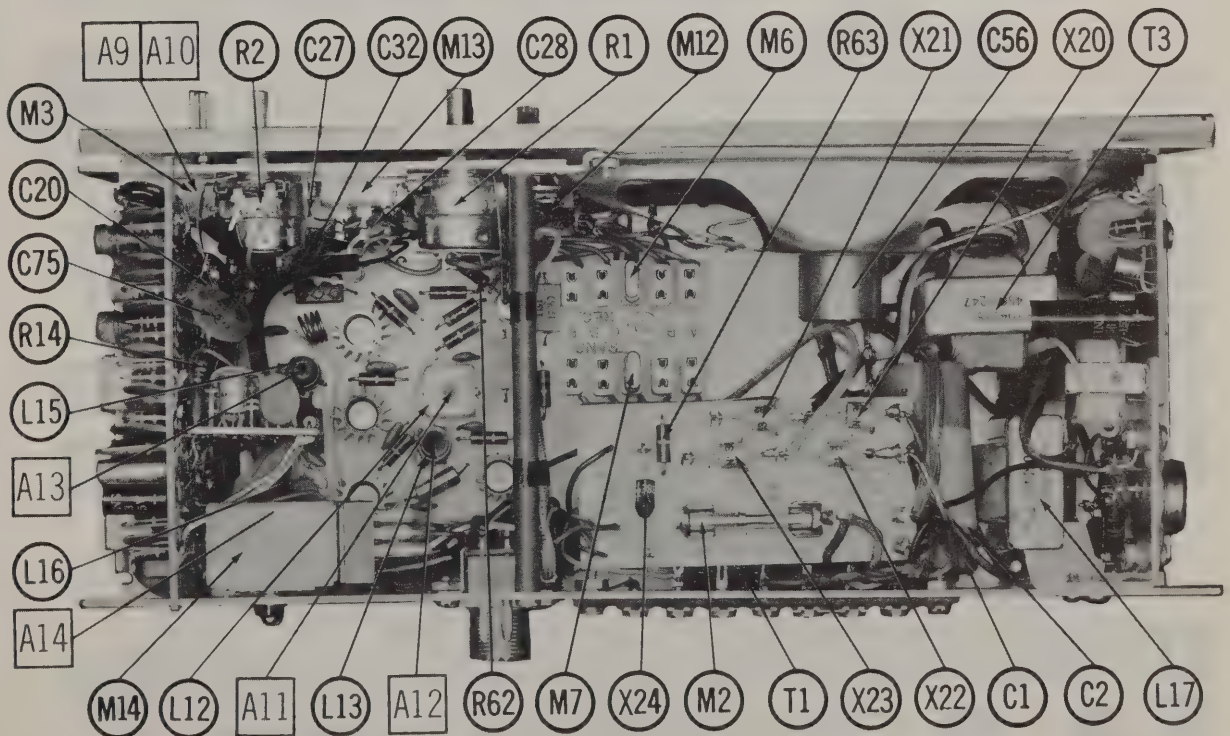
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

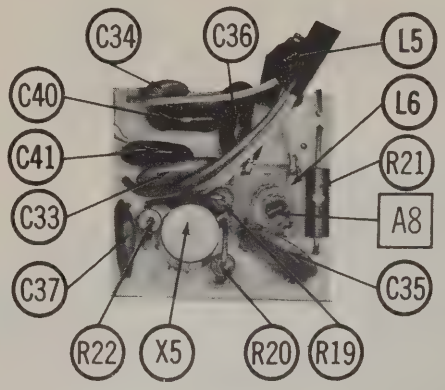
Connect either 50Ω dummy load or the normally used antenna system. Set channel selector (M12) to the usable channel nearest channel 11 (27.085MC).

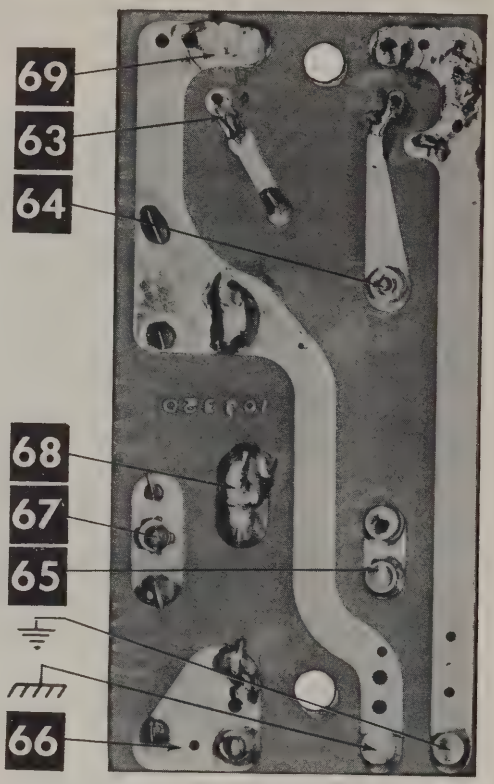
INDICATOR	ADJUST	REMARKS
Field strength meter	A11, A12, A13, A14	Key transmitter. Adjust for maximum indication. Current must not exceed 400MA as indicated on a milliammeter inserted into lead from pin 5 of power plug.

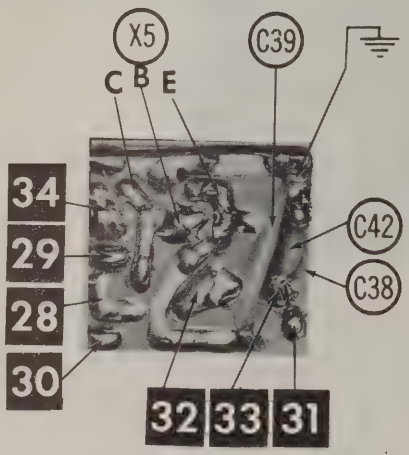
 © 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America

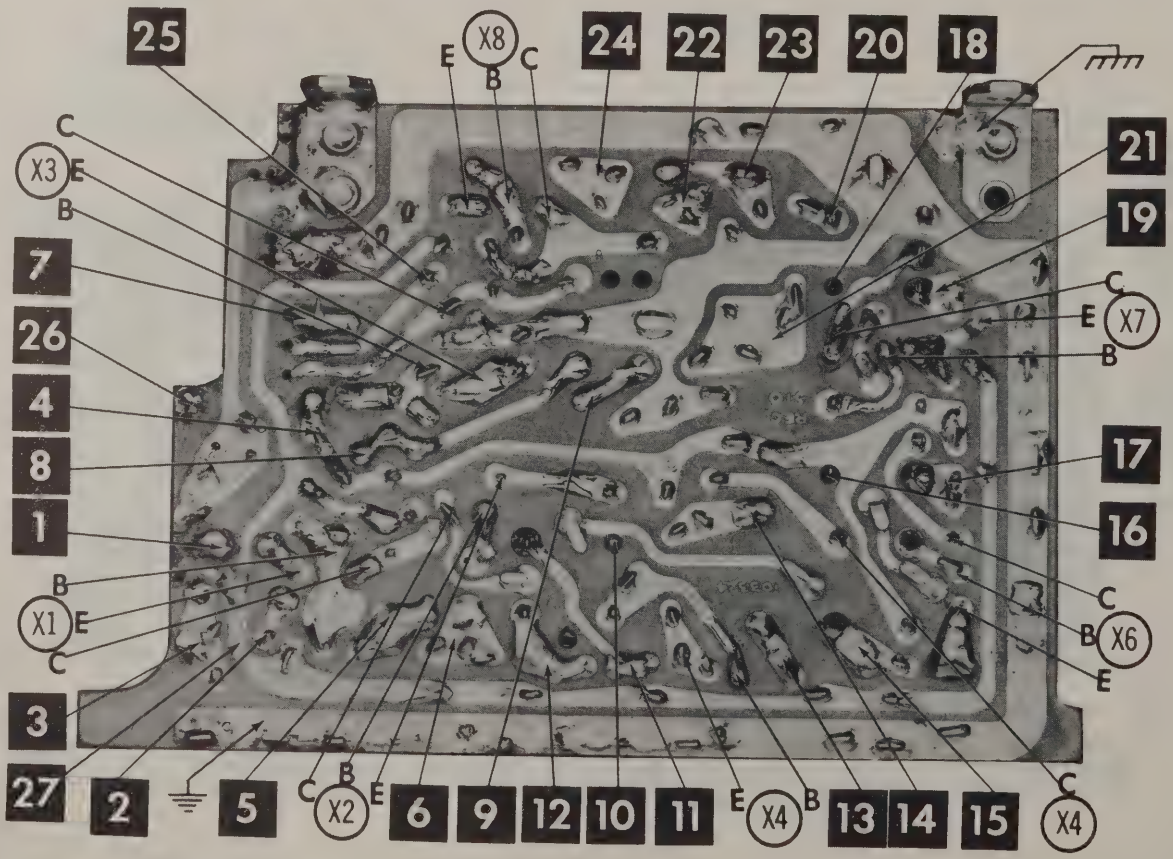

1680KC
455KC
L1
A7
X1
L2
A6
L4
A4
X4
M8
A3
L7
M4
X6
X2
X3
L3
A5
X8
M10
M9
X7
A1
L9
A2
L8
M5
455KC
455KC


A9
A10
R2
C27
C32
M13
C28
R1
M12
M6
R63
X21
C56
X20
T3
M3
C20
C75
R14
L15
A13
L16
A14
M14
L12
A11
L13
A12
R62
M7
X24
M2
T1
X23
X22
C1
C2
L17

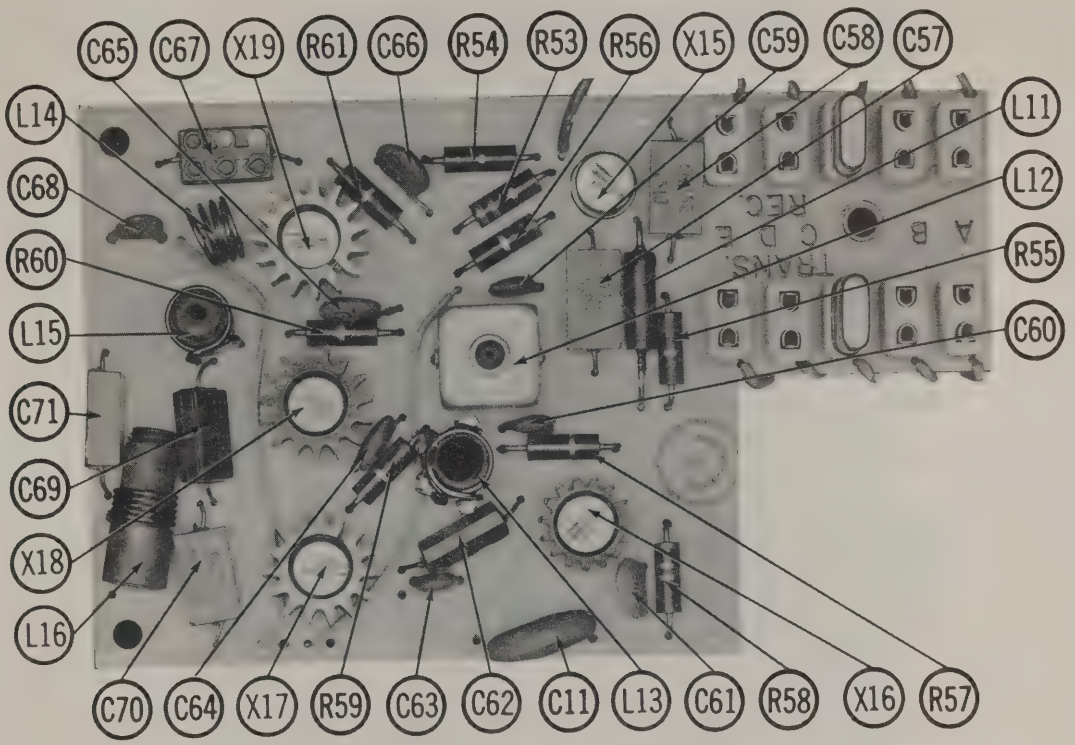


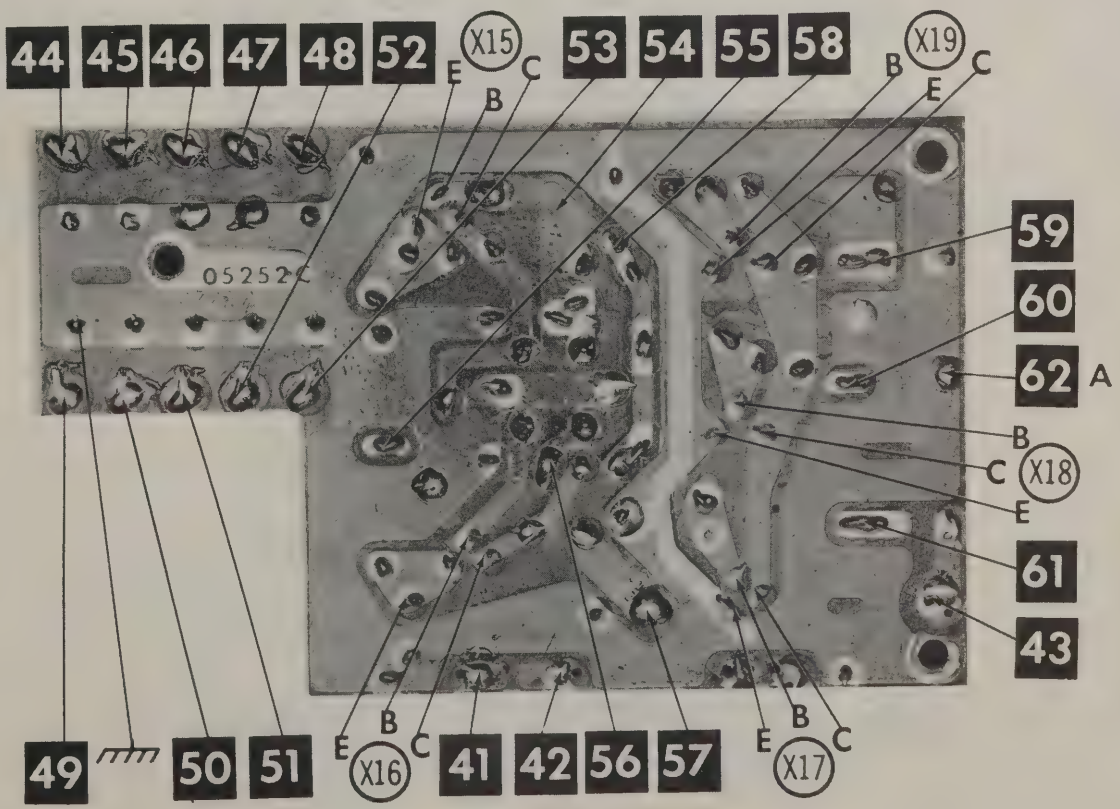




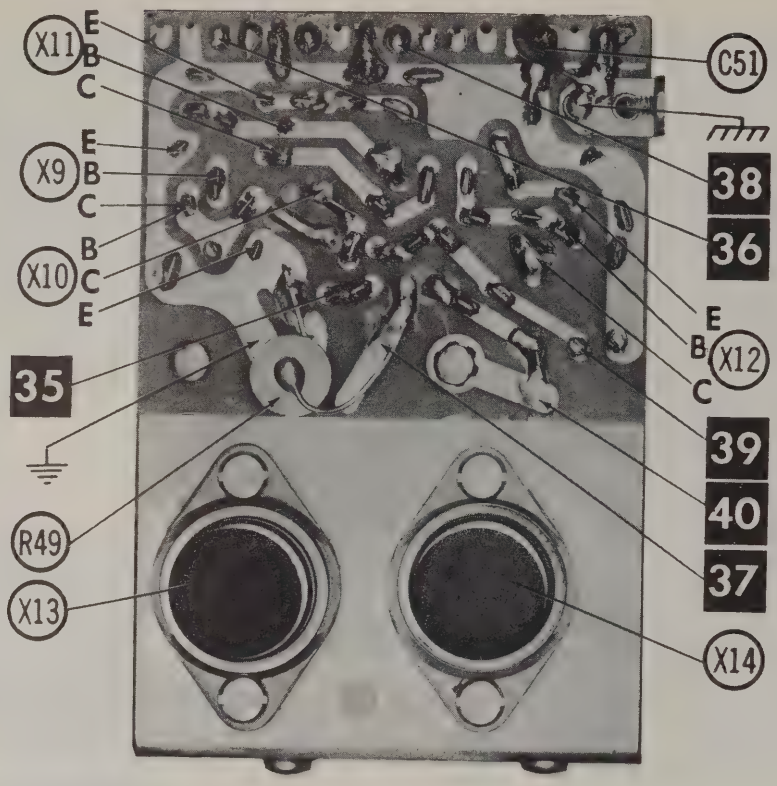


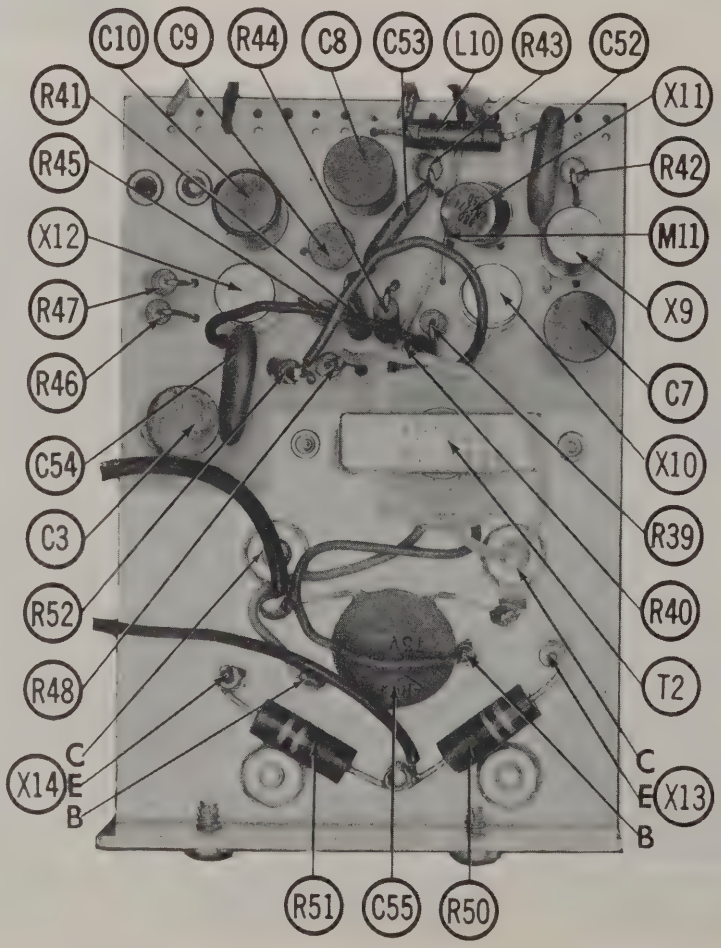
A Howard W. Sams CIRCUITRACE® Photo

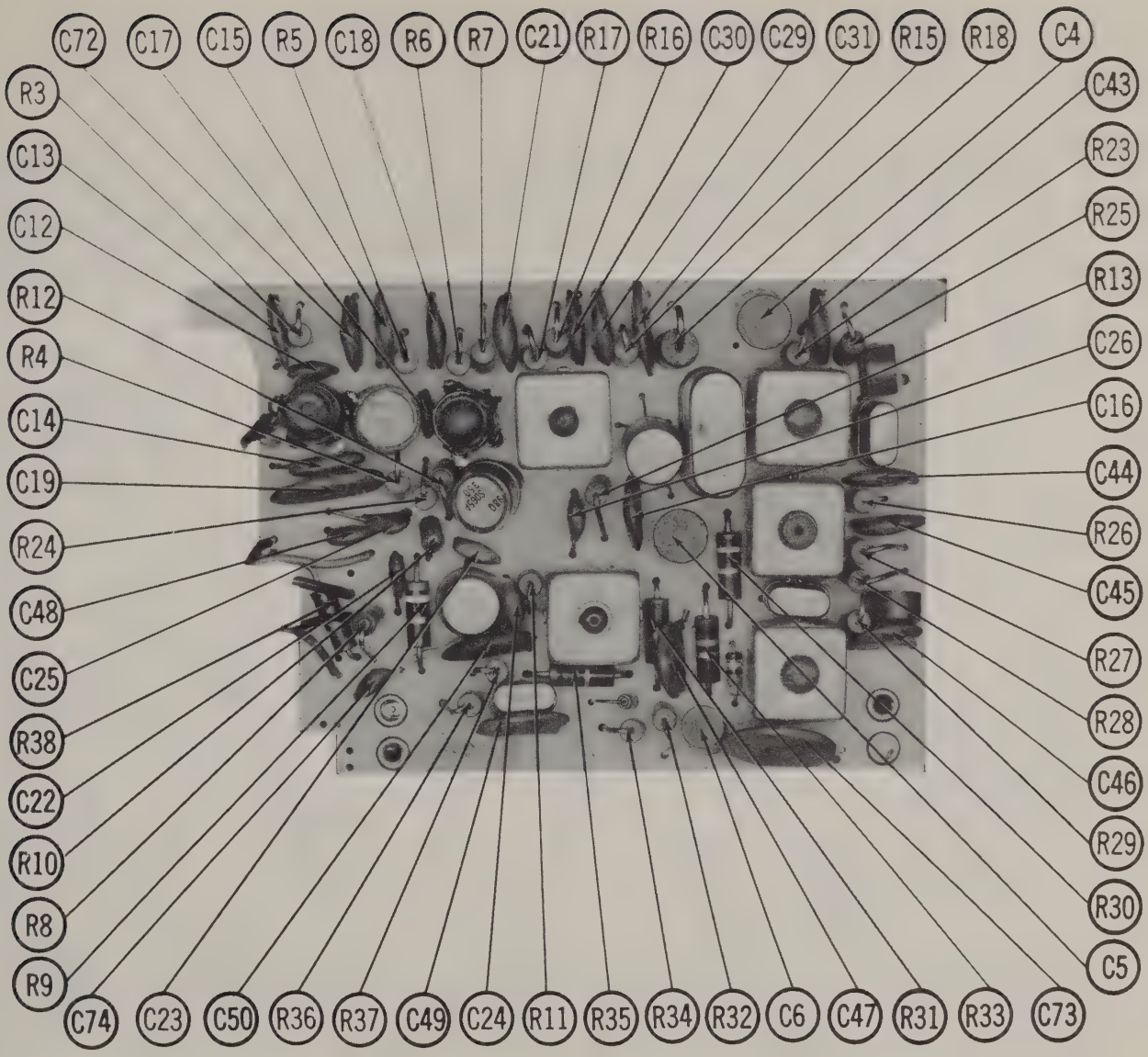




A Howard W. Sams CIRCUITRACE® Photo


X11
E
B
C
X9
E
B
C
X10
B
C
E
35
R49
X13
C51
38
36
E
B
C
X12
39
40
37
X14


C10
C9
R44
C8
C53
L10
R43
C52
R41
R45
X12
R47
R46
C54
C3
R52
R48
C
E
B
X14
X11
R42
M11
X9
C7
X10
R39
R40
T2
C
E
B
X13
R51
C55
R50

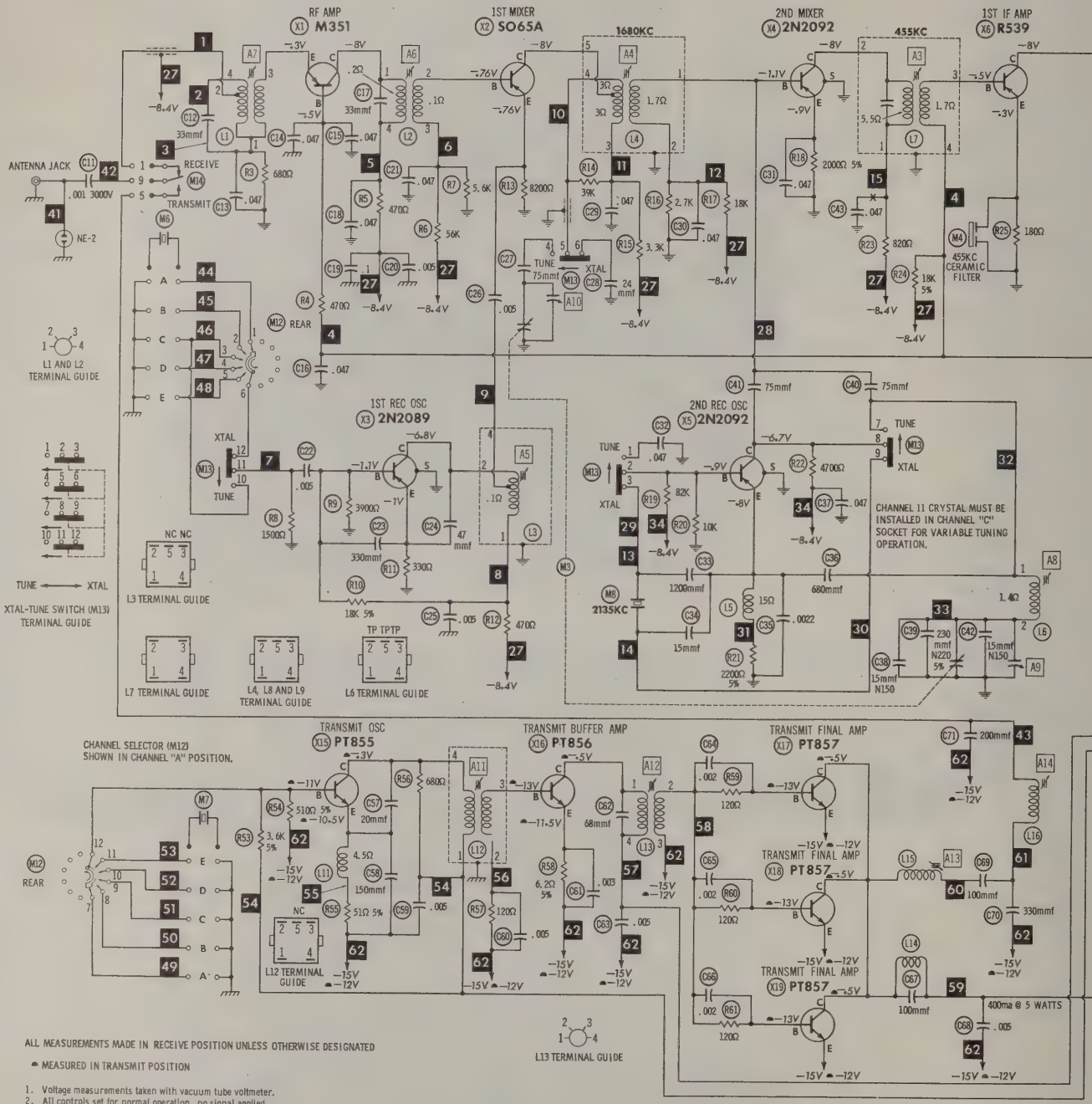


PARTS LIST AND DESCRIPTION

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	M351	RF Amp.				PNP
X2	SO-65A	1st Mixer				PNP
X3	2N2089	1st Rec. Osc.				PNP
X4	2N2092	2nd Mixer				PNP
X5	2N2092	2nd Rec. Osc.				PNP
X6	R539	1st IF Amp.				PNP
X7	R539	2nd IF Amp.				PNP
X8	M108	1st AF Amp.		GE-2	2N406	PNP
X9	2N1274	1st Squelch Amp.	DS-26	GE-2	2N591	PNP
X10	2N1274	2nd Squelch Amp.	DS-26	GE-2	2N591	PNP
X11	2N1274	2nd AF Amp.	DS-26	GE-2	2N591	PNP
X12	2N1274	Driver	DS-26	GE-2	2N591	PNP
X13	2N250	Output - Modulator	DS-520	GE-3	2N301	PNP
X14	2N250	Output - Modulator	DS-520	GE-3	2N301	PNP
X15	PT855	Transmit Osc.				NPN
X16	PT856	Transmit Buffer				NPN
X17	PT857	Transmit Final				NPN
X18	PT857	Transmit Final				NPN
X19	PT857	Transmit Final				NPN

(CONTINUED ON PAGE 28)



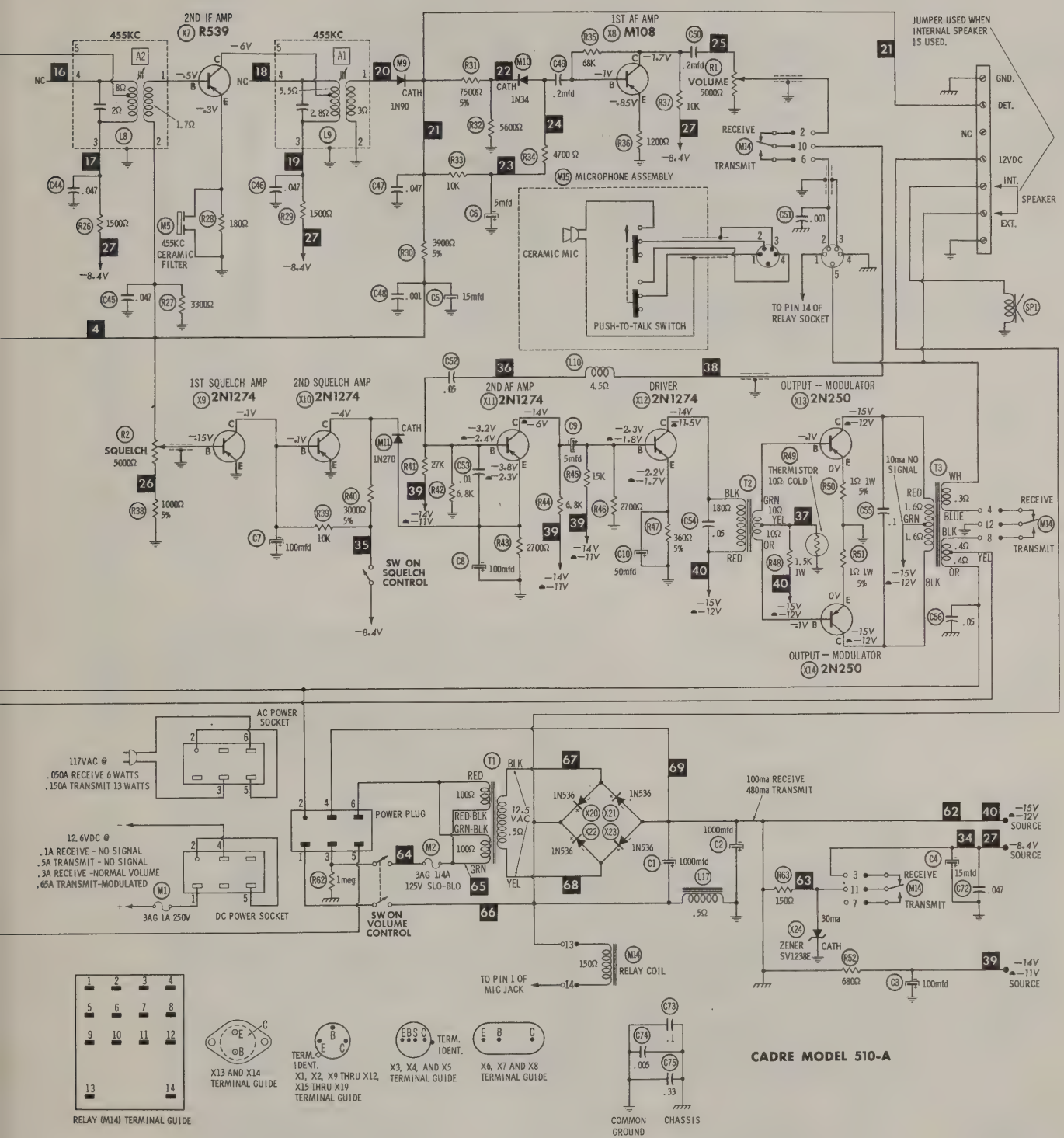
ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED

⬘ MEASURED IN TRANSMIT POSITION

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE™

©Howard W. Sams & Co., Inc, 1964


2ND IF AMP
X7 R539
455KC
455KC
1ST AF AMP
X8 M108
JUMPER USED WHEN INTERNAL SPEAKER IS USED.
GND.
DET.
NC
12VDC
INT.
SPEAKER
EXT.
VOLUME 5000Ω
RECEIVE
TRANSMIT
M15 MICROPHONE ASSEMBLY
CERAMIC MIC
PUSH-TO-TALK SWITCH
TO PIN 14 OF RELAY SOCKET
455KC CERAMIC FILTER
1ST SQUELCH AMP
X9 2N1274
2ND SQUELCH AMP
X10 2N1274
SQUELCH 5000Ω
SW ON SQUELCH CONTROL
2ND AF AMP
X11 2N1274
DRIVER
X12 2N1274
OUTPUT – MODULATOR
X13 2N250
THERMISTOR 10Ω COLD
10ma NO SIGNAL
OUTPUT – MODULATOR
X14 2N250
AC POWER SOCKET
117VAC @
.050A RECEIVE 6 WATTS
.150A TRANSMIT 13 WATTS
12.6VDC @
.1A RECEIVE - NO SIGNAL
.5A TRANSMIT - NO SIGNAL
.3A RECEIVE -NORMAL VOLUME
.65A TRANSMIT-MODULATED
3AG 1A 250V
DC POWER SOCKET
POWER PLUG
3AG 1/4A
125V SLO-BLO
SW ON VOLUME CONTROL
100ma RECEIVE
480ma TRANSMIT
RELAY COIL
TO PIN 1 OF MIC JACK
RELAY (M14) TERMINAL GUIDE
X13 AND X14 TERMINAL GUIDE
X1, X2, X9 THRU X12, X15 THRU X19 TERMINAL GUIDE
X3, X4, AND X5 TERMINAL GUIDE
X6, X7 AND X8 TERMINAL GUIDE
COMMON GROUND
CHASSIS
CADRE MODEL 510-A

PARTS LIST AND DESCRIPTION (CONTINUED)

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X20	650MA	101403	1N536 or D50 ①	1N3193 or 1N3253	10H or F1
X21	650MA	101403	1N536 or D50①	1N3193 or 1N3253	10H or F1
X22	650MA	101403	1N536 or D50 ①	1N3193 or 1N3253	10H or F1
X23	650MA	101403	1N536 or D50 ①	1N3193 or 1N3253	10H or F1
X24	30MA	104213 *	1N3018 or ZA8.2		1T8.2

* Zener Type
① X20 thru X23 may be replaced by a single unit, part #FW50.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	CADRE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	1000	15	101404	PRS1230	BR100015	QT1-32	TD-1000-15	TC1501	TVA-1163
C2	1000	15	101404	PRS1230	BR100015	QT1-32	TD-1000-15	TC1501	TVA-1163
C3	100	12	100656	BCD12100	NLP100-12	MT1-19	MLV100-12	TT12X100	VL-1140
C4	15	15	101013	BCD15015	ECSP15-25	MT1-10	MLV15-15	TT15X15	VL-1168
C5	15	15	101013	BCD15015	ECSP15-25	MT1-10	MLV15-15	TT15X15	VL-1168
C6	5	12	101115	BCD12005	ECSP5-50	MT1-3	MLV5-12	TT12X5	VL-1124
C7	100	12	100656	BCD12100	NLP100-12	MT1-19	MLV100-12	TT12X100	VL-1140
C8	100	3	100689	BCD3100	ECSP100-3	MT1-22	MLV100-3	PET1400	VL-1051
C9	5	15	101431	BCD15005	ECSP5-15	MT1-3	MLV5-15	PET1535	VL-1164
C10	50	6	101113	BCD6050	NLP50-10	MT1-15	MLV50-6	TT6X50	VL-1094

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C11	.001 3000V		HVD-30	DD30-102		3CCD-102	3HV210	30GA-D10
C12	33		DI 33	DD-330	L10Q33	CCD-330	GP433	5GA-Q33
C13	.047		TTD-05				TA150	TH-S50
C14	.047		TTD-05				TA150	TH-S50
C15	.047		TTD-05				TA150	TH-S50
C16	.047		TTD-05				TA150	TH-S50
C17	33		DI 33	DD-330	L10Q33	CCD-330	GP433	5GA-Q33
C18	.047		TTD-05				TA150	TH-S50
C19	.1 75V		TTD-1	DA-104	H-05P1		TA010	TH-P10
C20	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C21	.047		TTD-05				TA150	TH-S50
C22	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C23	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C24	47		DI 47	DD-470	L10Q47	CCD-470	GP447	5GA-Q47
C25	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C26	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C27	75		ADM-15-750	CPR-75J	CD10F750J	DM-10-750	MCB230	MS-475
C28	24		DI 25	DD-240	LA10Q25-SL	CCD-250	GP425	5GA-Q25
C29	.047		TTD-05				TA150	TH-S50
C30	.047		TTD-05				TA150	TH-S50
C31	.047		TTD-05				TA150	TH-S50
C32	.047		TTD-05				TA150	TH-S50
C33	.0012		DI-1200	DD-122	LA10D12-C4	CCD-122	GP212	5GA-D12
C34	15		DI 15	DD-150	LA10Q15-SL	CCD-150	GP415	5GA-Q15
C35	.0022		BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C36	680		ADM-19-681	CPR-680J	CD19F681K	DM-15-681	MCB248	MS-368
C37	.047		TTD-05				TA150	TH-S50
C38	15 N150							10TCP-Q15
C39	230 N220 5%	#105219						
C40	75		ADM-15-750	CPR-75J	CD10F750J	DM-10-750	MCB230	MS-475
C41	75		ADM-15-750	CPR-75J	CD10F750J	DM-10-750	MCB230	MS-475
C42	15 N150							10TCP-Q15

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C43	.047		TTD-05				TA150	TH-S50
C44	.047		TTD-05				TA150	TH-S50
C45	.047		TTD-05				TA150	TH-S50
C46	.047		TTD-05				TA150	TH-S50
C47	.047		TTD-05				TA150	TH-S50
C48	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C49	.2 10V			UK10-204				
C50	.2 10V			UK10-204				
C51	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C52	.05		TTD-05				TA150	TH-S50
C53	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C54	.05		TTD-05				TA150	TH-S50
C55	.1 15V		TTD-1	DA-104	H-05P1		TA010	TH-P10
C56	.05		TTD-05				TA150	TH-S50
C57	20		1469-20	TCN-20	22P5Q2	CM-15C-200		MS-42
C58	150						MCB236	MS-315
C59	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C60	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C61	.003		BPD-0033	DD-302	BYA10D3	CCD-302	GP230	5GA-D30
C62	68		1469-68	TCN-68	22R5Q68	CM-15E-680		MS-468
C63	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C64	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C65	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C66	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C67	100		1469-100	TCN-100	22R5T1	CM-15E-101	MCE235	MS-31
C68	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C69	100		1469-100	TCN-100	22R5T1	CM-15E-101	MCE235	MS-31
C70	330		ADM-15-331	CPR-330J	CD10F331J	DM-10-331		MS-333
C71	200		1469-200	TCN-200	22R5T2	CM-15E-201	MCE237	MS-32
C72	.047		TTD-05				TA150	TH-S50
C73	.1		TTD-1	DA-104	H-05P1		TA010	TH-P10
C74	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C75	.33	#105046						

\# Cadre Part Number.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			CADRE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	5000Ω	101007	B-11, KR2 or (F2-5000, SU204, KR2)		Q13-114, 76-2, or (BU2, CF60, SS14, WF)*	UA53A, SF1000, US42 or (RU53A, SL38, SF1000, US42 or (U12, US27)
R2	Squelch & Switch	5000Ω	101189	B-11, KR1 or (F2-5000, SU204, KR1)		Q13-114, 76-1, or (BU2, CF60, SS14, GC)*	UA53A, SF1000, US41 or (RU53A, SL38, SF1000, US41) or (U12, US26)

* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA				ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS				IRC PART No.	WORKMAN PART No.	REMARKS
R49	10Ω Cold		FT10	#105191						

\# Cadre Part Number.

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		CADRE PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Input	103325					
L2	RF Interstage	103326					
L3	1st Rec. Osc.	103327					
L4	1st IF (1680KC)	105217					
L5	RF Choke (1MH)	104001	TV208	72F103AP	RTC-8589	T875	
L6	2nd Rec. Osc.	105224					
L7	2nd IF (455KC)	101400					
L8	3rd IF (455KC)	101018					
L9	4th IF (455KC)	101019					
L10	RF Choke (50uh)	1008-500		72F475AP		TG248	
L11	RF Choke (50uh)	1008-500		72F475AP		TG248	
L12	Buffer Transformer	103312					
L13	Transmit Interstage	103313					
L14	Final RF Output	103314					
L15	Bandpass Filter	103315					
L16	Antenna Loading	103316					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	CADRE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L17	650MA	.5Ω	200MH	105230					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	SEC. 1	CADRE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .075A	117VAC @ .075A	12.5VAC @ .75A (AC)	104299	P-2959①	P-8130①	26F67①	F-25X①	①117VAC use only

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	CADRE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	4	1	101020					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	CADRE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	100Ω CT	25Ω CT	104088					
		SEC. 2						
		3-4Ω						

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		CADRE PART No.	QUAM PART No.	
SP1	6" x 2" PM 3-4Ω	101025		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			CADRE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1A 250V	101437		312001.	155020	AGC 1	HDJ
M2	3AG	1/4A 125V S/B	101095		313.250	121004	MDL 1/4	4405

MISCELLANEOUS

ITEM No.	PART NAME	CADRE PART No.	NOTES
M3	Tuning Cap.	105222	2 Section
M4	Transfilter	101897	455KC Ceramic Filter (Clevite TF-01A)
M5	Transfilter	101897	455KC Ceramic Filter (Clevite TF-01A)
M6	Crystal		Receive (Part Numbers are Consecutive from 104121 for Channel 1 to 104143 for Channel 23)
M7	Crystal		Transmit (Part Numbers are consecutive from 103377 for Channel 1 to 103399 for Channel 23)
M8	Crystal	101116	2nd Receive Osc. (2135KC)
M9	Diode	101153	Det.-AVC (1N90)
M10	Diode	101679	Noise Limiter (1N34)
M11	Diode	101154	Squelch Gate (1N270)
M12	Switch	104018	Channel Selector (5 Position, Wafer)
M13	Switch	105223	Xtal-Tune (4PDT, Slide)
M14	Relay	103335	Transmit-Receive (4PDT, Enclosed)
M15	Microphone Ass'y.	104092	Includes Ceramic Mic and Push-to-talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Knob - Channel Selector	104030
Knob - Tuning, Volume, Squelch	104031
Tuning Dial	105238
Front Panel	103331
Rubber Feet	101035

ITEM	PART No.
Microphone Plug	101102
Power Plug	101642
AC Cord and Socket	101826
DC Cord and Socket	101827

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)

TRADE NAME:	Cadre Model 515
SUPPLIER:	For Current Address, see Master Index
TYPE SET:	19 Transistor Transceiver
POWER SUPPLY:	110-120 Volts AC, 60 Cycles (or) 12 Volt Storage Battery
RATING:	6 Watts, .050 Amp. @ 117VAC (Receive) 13 Watts, .150 Amp. @ 117VAC (Transmit) .1 Amp. @ 12.6VDC (Receive) .5 Amp. @ 12.6VDC (Transmit)
TUNING RANGE:	Any 5 CB Channels 1 thru 23

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:
A1 thru A5.....GENERAL CEMENT #5009, 8195, 8274
WALSCO #2515, 2516, 2532
A6 thru A11.....GENERAL CEMENT #8282, 8606, 8606-L
WALSCO #2526, 2541, 2542

RECEIVER ALIGNMENT

Connect a VTVM, set to read negative voltage, to point ◇A◇ (CircuiTrace #4).
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .1mfd to base of X4 (2nd Mixer), low side to ground. (455KC Unmod.)	Any	A1, A2, A3	Adjust for maximum indication.
High side thru .1mfd to base of X2 (1st Mixer), low side to ground. (1680KC Unmod.)	Any	A4	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to ground. (27.085MC Unmod.)	11 (27.085MC)	A5, A6, A7	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

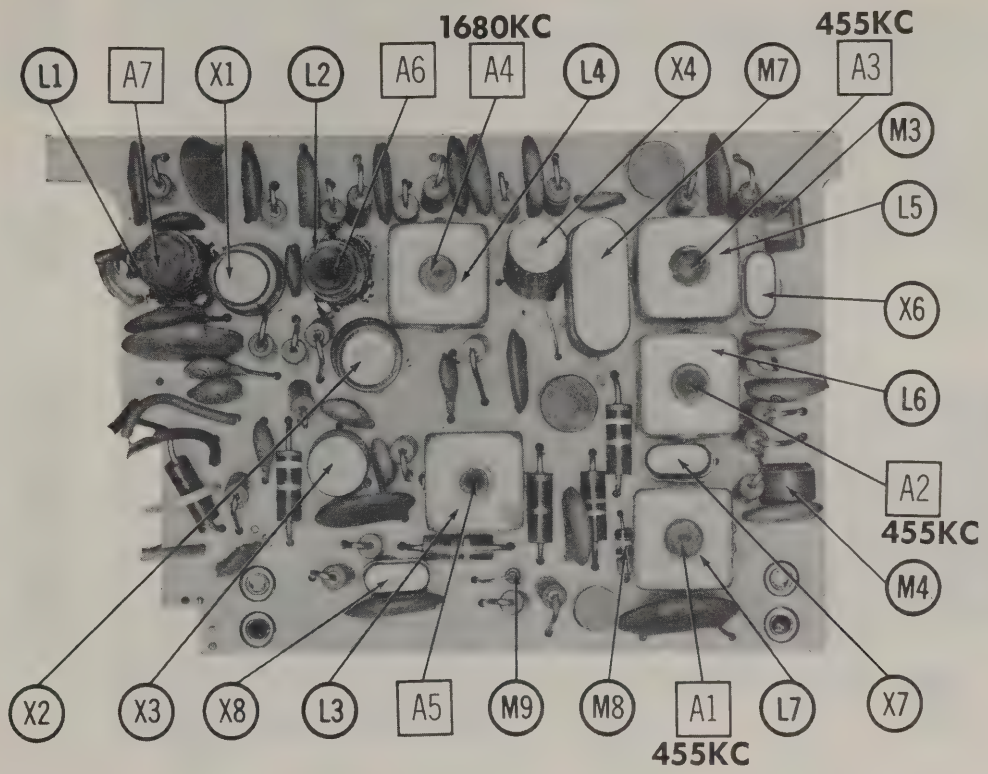
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

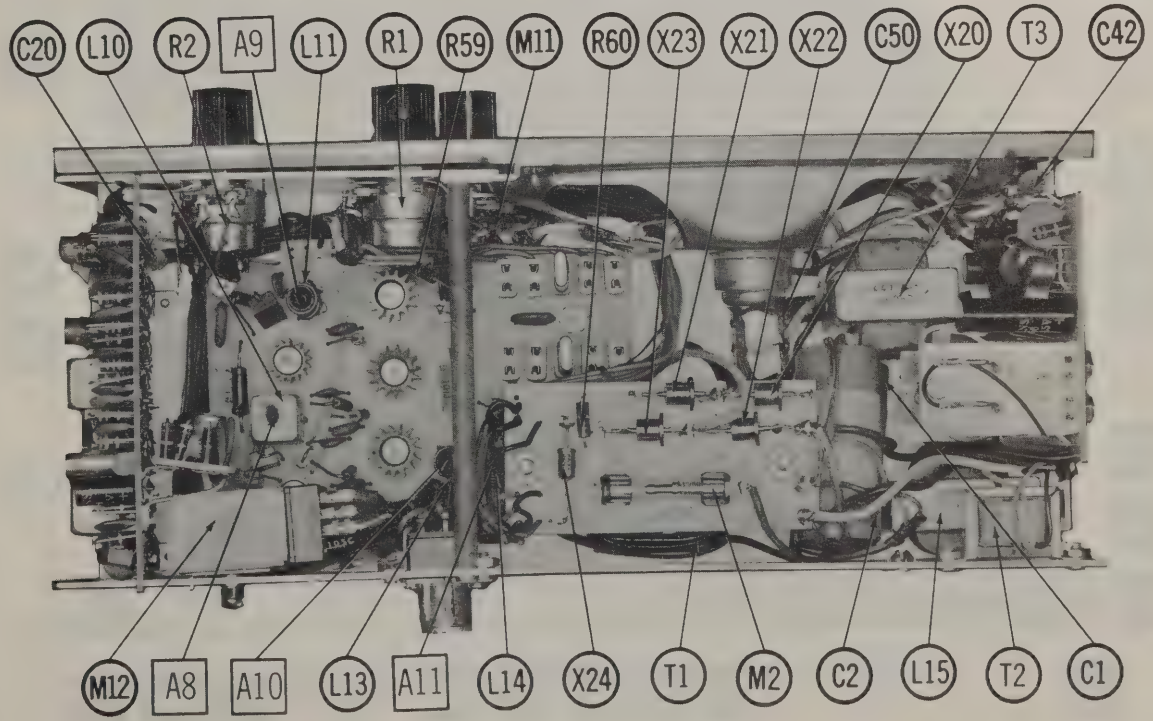
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

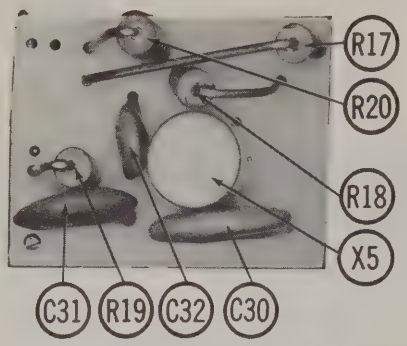
Connect either 50Ω dummy load or the normally used antenna system. Set channel selector (M11) to the usable channel nearest channel 11 (27.085MC)

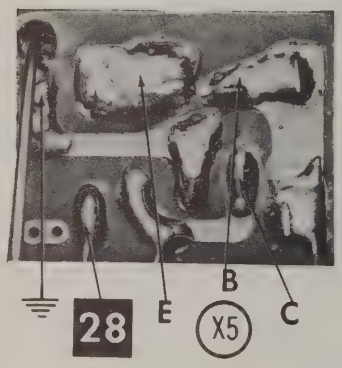
SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
Field Strength Meter.		A8, A9, A10, A11	Key transmitter. Adjust for maximum indication. Current must not exceed 400MA as indicated on a millameter inserted into lead from pin 5 of power plug.

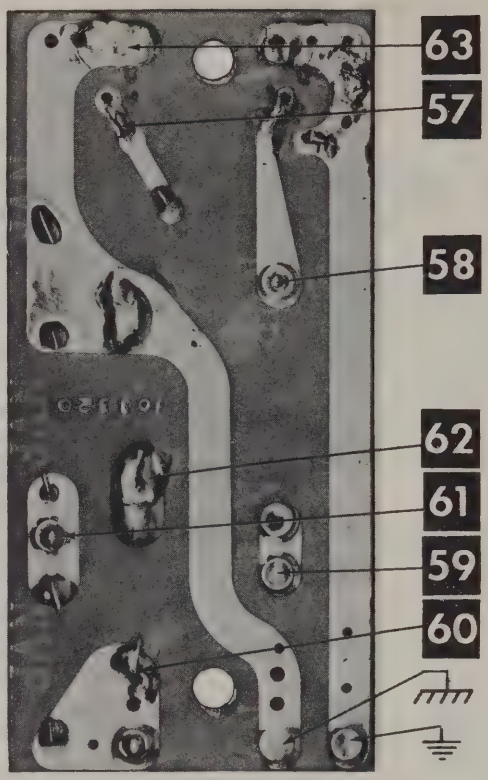
 © 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY519

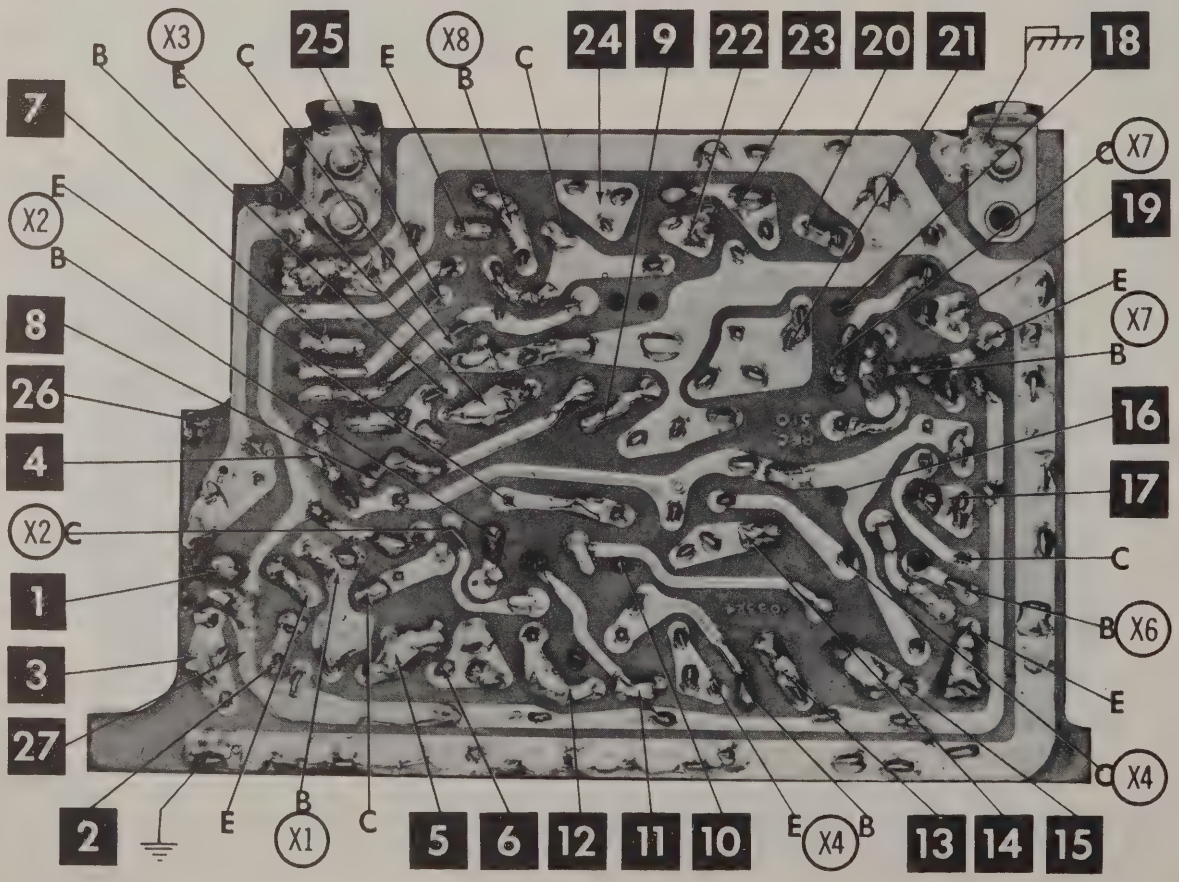

1680KC
455KC
L1
A7
X1
L2
A6
A4
L4
X4
M7
A3
M3
L5
X6
L6
A2
455KC
M4
X2
X3
X8
L3
A5
M9
M8
A1
455KC
L7
X7

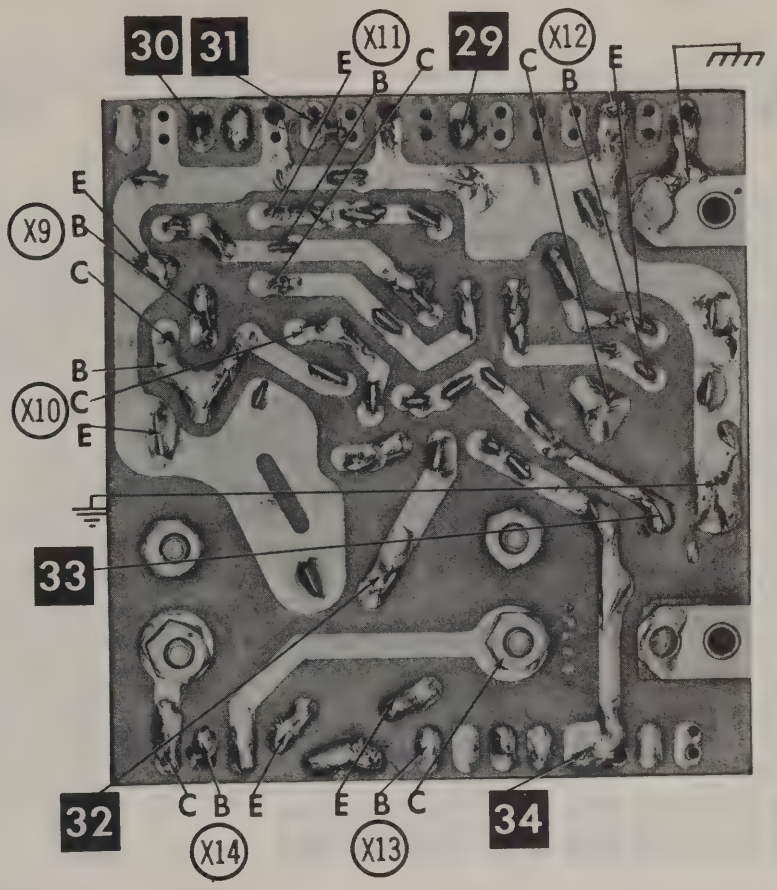

C20
L10
R2
A9
L11
R1
R59
M11
R60
X23
X21
X22
C50
X20
T3
C42
M12
A8
A10
L13
A11
L14
X24
T1
M2
C2
L15
T2
C1

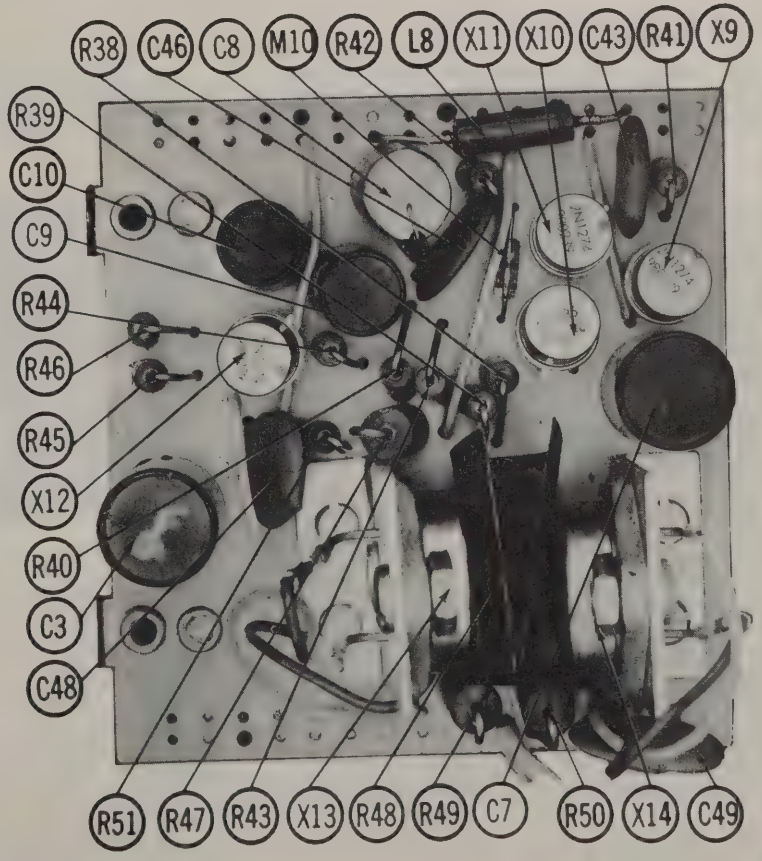

R17
R20
R18
X5
C31
R19
C32
C30


28
E
B
X5
C


63
57
58
62
61
59
60

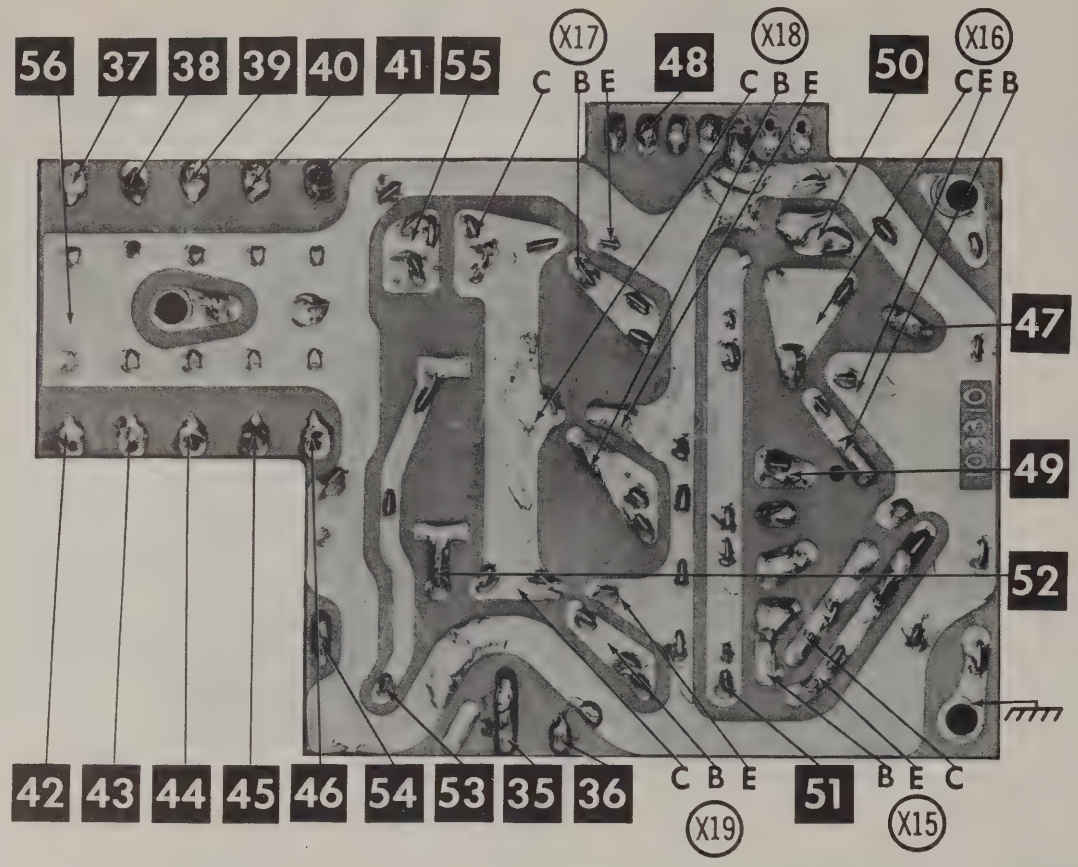

X3
B
E
C
25
E
X8
B
C
24
9
22
23
20
21
18
7
X2
E
B
8
26
4
X2
C
1
3
27
2
E
B
X1
C
5
6
12
11
10
E
X4
B
13
14
15
C
X7
19
E
X7
B
16
17
C
B
X6
E
C
X4

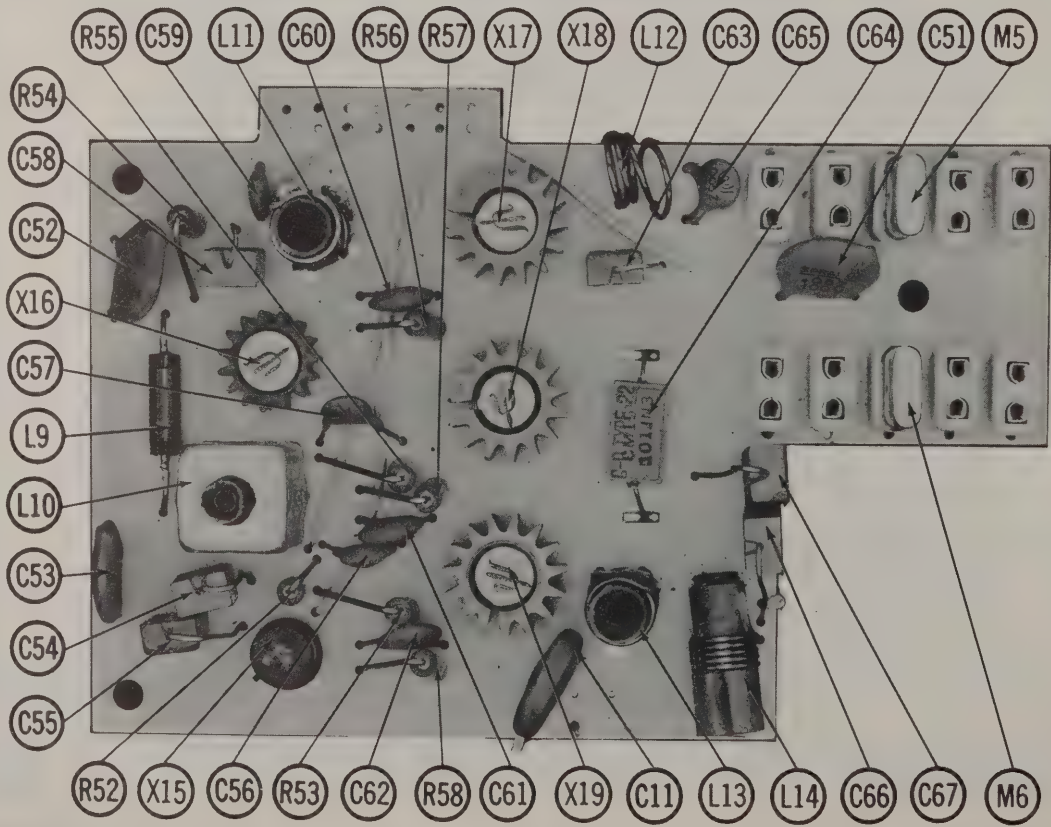


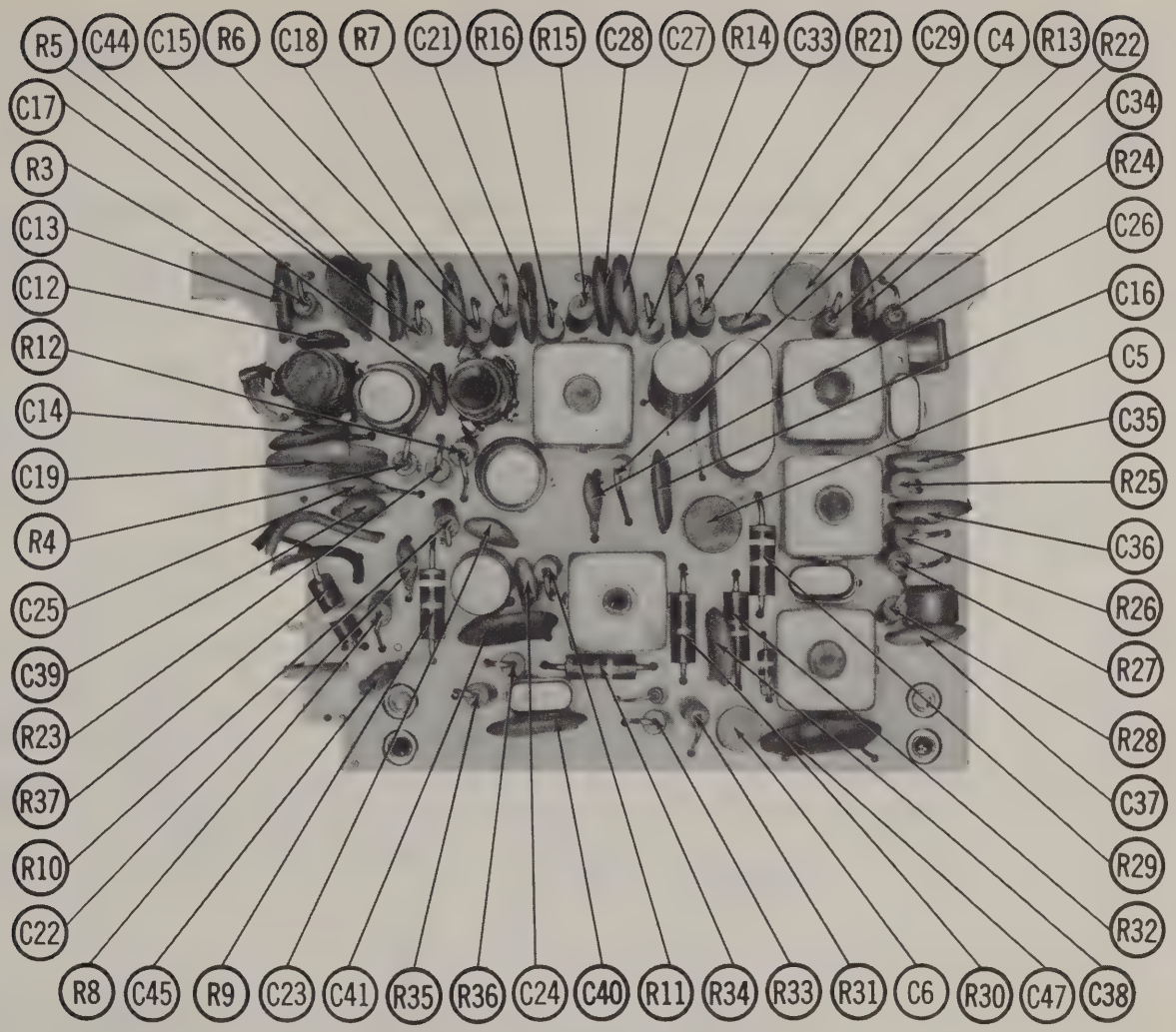


A Howard W. Sams CIRCUITRACE® Photo

A Howard W. Sams CIRCUITRACE® Photo







PARTS LIST AND DESCRIPTION

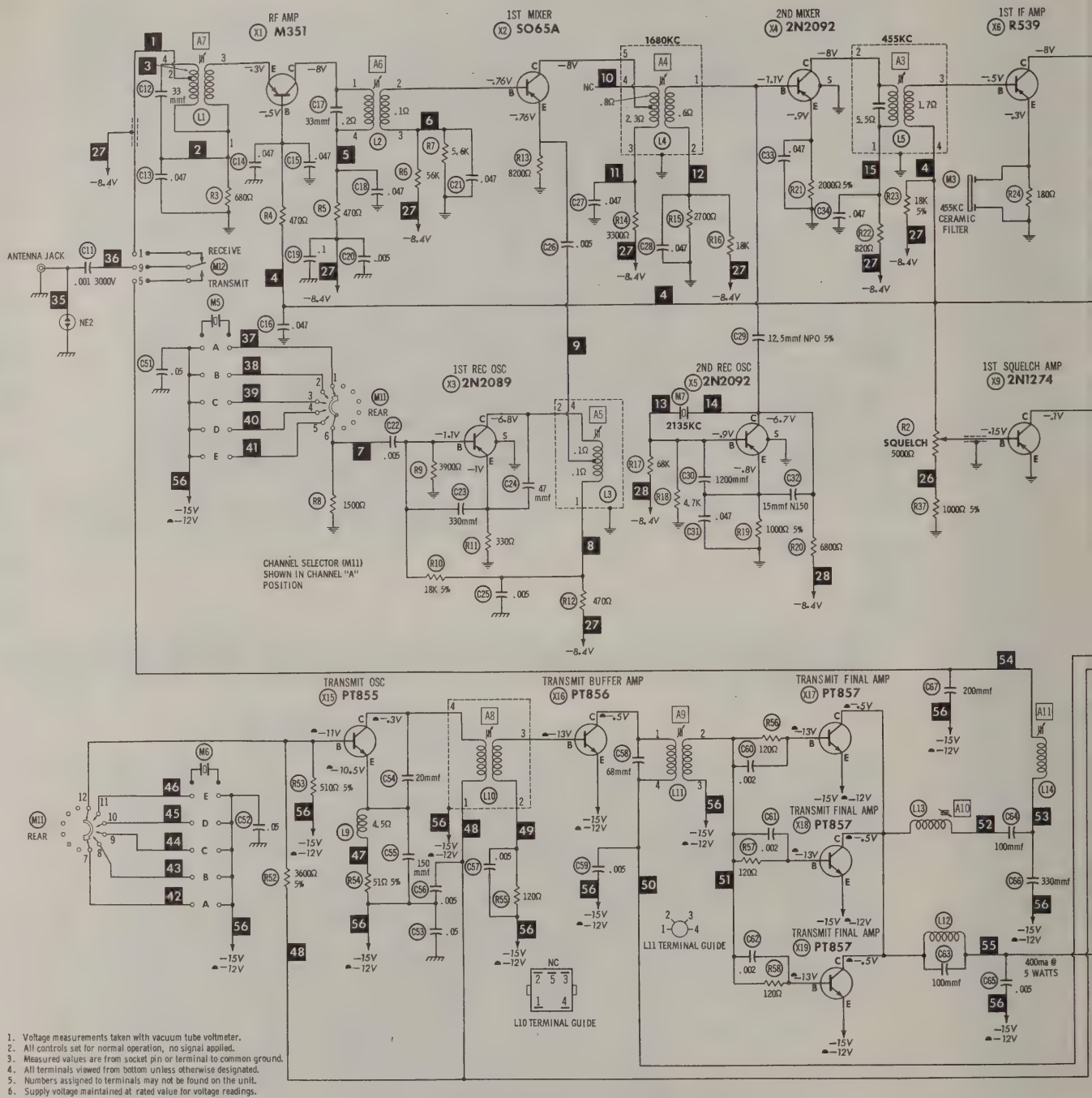
WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	M351	RF Amp.				PNP
X2	SO-65A	1st Mixer				PNP
X3	2N2089	1st Rec. Osc.				PNP
X4	2N2092	2nd Mixer				PNP
X5	2N2092	2nd Rec. Osc.				PNP
X6	R539	1st IF Amp.				PNP
X7	R539	2nd IF Amp.				PNP
X8	M108	1st AF Amp.		GE-2	2N406	PNP
X9	2N1274	1st Squelch Amp.	DS-26	GE-2	2N591	PNP
X10	2N1274	2nd Squelch Amp.	DS-26	GE-2	2N591	PNP
X11	2N1274	2nd AF Amp.	DS-26	GE-2	2N591	PNP
X12	2N1274	Driver	DS-26	GE-2	2N591	PNP
X13	2N250	Output-Modulator	DS-520	GE-3	2N301	PNP
X14	2N250	Output-Modulator	DS-520	GE-3	2N301	PNP
X15	PT855	Transmit Osc.				NPN
X16	PT856	Transmit Buffer				NPN
X17	PT857	Transmit Final				NPN
X18	PT857	Transmit Final				NPN
X19	PT857	Transmit Final				NPN

(CONTINUED ON PAGE 38)



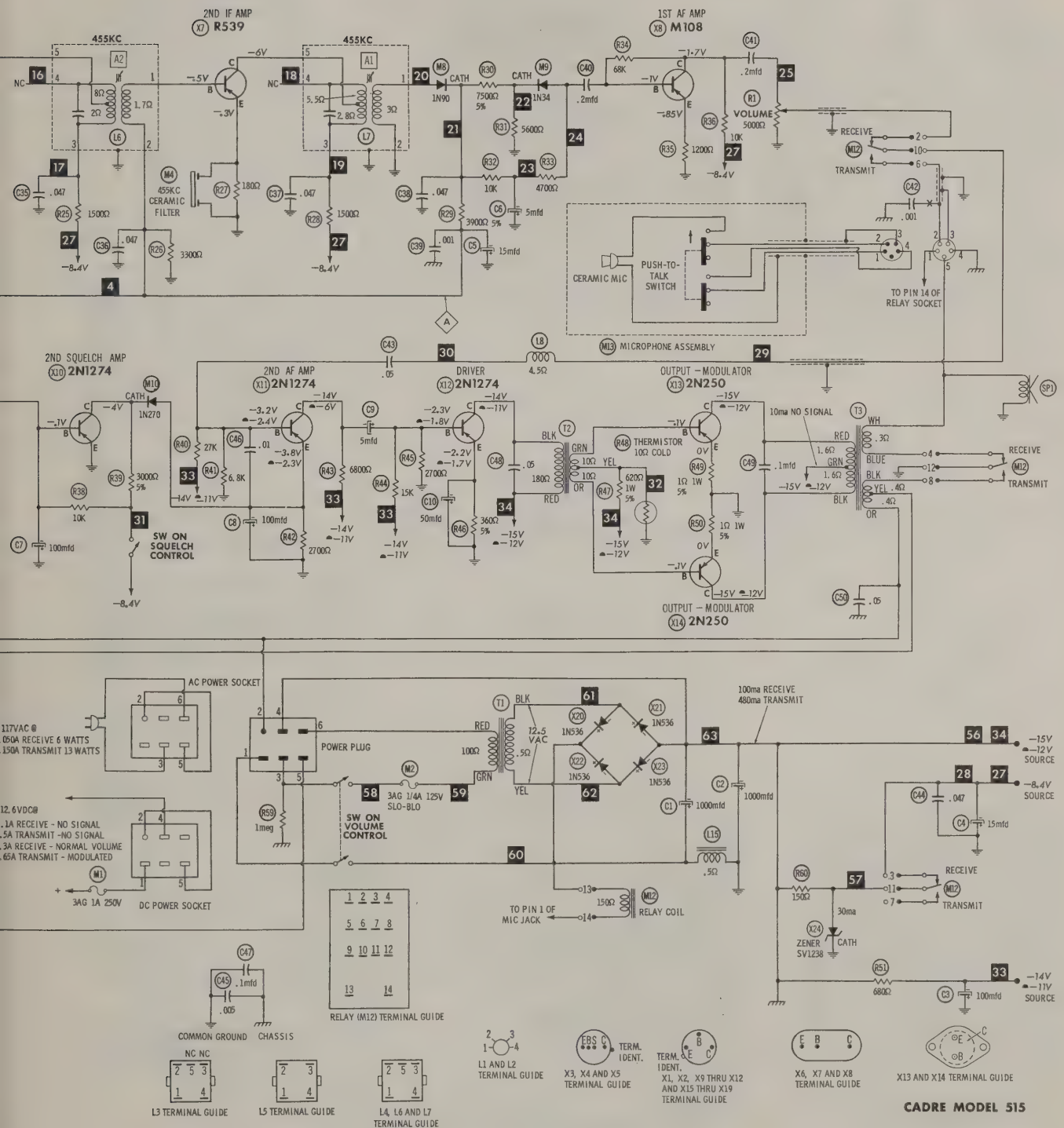
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.

▬ MEASURED IN TRANSMIT POSITION

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE™

©Howard W. Sams & Co., Inc. 1964


2ND IF AMP
X7 R539
455KC
455KC
1ST AF AMP
X8 M108
2ND SQUELCH AMP
X10 2N1274
2ND AF AMP
X11 2N1274
DRIVER
X12 2N1274
OUTPUT – MODULATOR
X13 2N250
OUTPUT – MODULATOR
X14 2N250
455KC CERAMIC FILTER
VOLUME 5000Ω
RECEIVE
TRANSMIT
CERAMIC MIC
PUSH-TO-TALK SWITCH
TO PIN 14 OF RELAY SOCKET
MICROPHONE ASSEMBLY
THERMISTOR 10Ω COLD
10ma NO SIGNAL
SW ON SQUELCH CONTROL
AC POWER SOCKET
117VAC @
.050A RECEIVE 6 WATTS
.150A TRANSMIT 13 WATTS
POWER PLUG
12.6VDC@
.1A RECEIVE - NO SIGNAL
.5A TRANSMIT -NO SIGNAL
.3A RECEIVE - NORMAL VOLUME
.65A TRANSMIT - MODULATED
3AG 1A 250V
DC POWER SOCKET
3AG 1/4A 125V SLO-BLO
SW ON VOLUME CONTROL
100ma RECEIVE
480ma TRANSMIT
TO PIN 1 OF MIC JACK
RELAY COIL
ZENER SV1238
30ma
RELAY (M12) TERMINAL GUIDE
COMMON GROUND
CHASSIS
L3 TERMINAL GUIDE
L5 TERMINAL GUIDE
L4, L6 AND L7 TERMINAL GUIDE
L1 AND L2 TERMINAL GUIDE
X3, X4 AND X5 TERMINAL GUIDE
TERM. IDENT.
X1, X2, X9 THRU X12 AND X15 THRU X19 TERMINAL GUIDE
X6, X7 AND X8 TERMINAL GUIDE
X13 AND X14 TERMINAL GUIDE
CADRE MODEL 515

PARTS LIST AND DESCRIPTION (CONTINUED)

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X20	480MA	103318	1N536 or D50①	1N3193 or 1N3253	10H or F1
X21	480MA	103318	1N536 or D50①	1N3193 or 1N3253	10H or F1
X22	480MA	103318	1N536 or D50①	1N3193 or 1N3253	10H or F1
X23	480MA	103318	1N536 or D50①	1N3193 or 1N3253	10H or F1
X24	30MA	100624*	1N3018 or ZA8.2		1T8.2

① X20 thru X23 may be replaced by a single unit. Part Number FW50.
* Zener Type.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	CADRE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	1000	15	101404	PRS1230	BR100015	QT1-32	TD-1000-15	TC1501	TVA-1163
C2	1000	15	101404	PRS1230	BR100015	QT1-32	TD-1000-15	TC1501	TVA-1163
C3	100	12	100656	BCD12100	NLP100-12	MT1-19	MLV100-12	TT12X100	VL-1140
C4	15	15	101013	BCD15015	ECSP15-25	MT1-10	MLV15-15	TT15X15	VL-1168
C5	15	15	101013	BCD15015	ECSP15-25	MT1-10	MLV15-15	TT15X15	VL-1168
C6	5	12	101115	BCD12005	ECSP5-50	MT1-3	MLV5-12	TT12X5	VL-1124
C7	100	12	100656	BCD12100	NLP100-12	MT1-19	MLV100-12	TT12X100	VL-1140
C8	100	3	100689	BCD3100	ECSP100-3	MT1-22	MLV100-3	PET1400	VL-1051
C9	5	15	101431	BCD15005	ECSP5-15	MT1-3	MLV5-15	PET1535	VL-1164
C10	50	6	101113	BCD6050	NLP50-10	MT1-15	MLV50-6	TT6X50	VL-1094

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C11	.001 3000V		HVD-30	DD30-102		3CCD-102	3HV210	30GA-D10
C12	33		DI-33	DD-330	L10Q33	CCD-330	GP433	5GA-Q33
C13	.047		TTD-05				TA150	TH-S50
C14	.047		TTD-05				TA150	TH-S50
C15	.047		TTD-05				TA150	TH-S50
C16	.047		TTD-05				TA150	TH-S50
C17	33		DI 33	DD-330	L10Q33	CCD-330	GP433	5GA-Q33
C18	.047		TTD-05				TA150	TH-S50
C19	.1		TTD-1	DA-104	H-05P1		TA010	TH-P10
C20	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C21	.047		TTD-05				TA150	TH-S50
C22	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C23	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C24	47		DI 47	DD-470	L10Q47	CCD-470	GP447	5GA-Q47
C25	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C26	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C27	.047		TTD-05				TA150	TH-S50
C28	.047		TTD-05				TA150	TH-S50
C29	12.5 NPO 5%			TCZ-12			CN0412	10TCC-Q12
C30	1200		DI-1200	DD-122	LA10D12-C4	CCD-122	GP212	5GA-D12
C31	.047		TTD-05				TA150	TH-S50
C32	15 N150							10TCP-Q15
C33	.047		TTD-05				TA150	TH-S50
C34	.047		TTD-05				TA150	TH-S50
C35	.047		TTD-05				TA150	TH-S50
C36	.047		TTD-05				TA150	TH-S50
C37	.047		TTD-05				TA150	TH-S50
C38	.047		TTD-05				TA150	TH-S50
C39	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C40	.2			UK10-204				
C41	.2			UK10-204				
C42	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C43	.05		TTD-05				TA150	TH-S50
C44	.047		TTD-05				TA150	TH-S50
C45	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C46	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C47	.1		TTD-1	DA-104	H-05P1		TA010	TH-P10
C48	.05		TTD-05				TA150	TH-S50
C49	.1		TTD-1	DA-104	H-05P1		TA010	TH-P10
C50	.05		TTD-05				TA150	TH-S50
C51	.05		TTD-05				TA150	TH-S50
C52	.05		TTD-05				TA150	TH-S50
C54	20		1469-20	TCN-20	22P5Q2	CM-15C-200		MS042
C55	150						MCB236	MS-315
C56	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C57	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C58	68		1469-68	TCN-68	22R5Q68	CM-15E-680		MS-468
C59	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C60	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C61	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C62	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C63	100		1469-100	TCN-100	22R5T1	CM-15E-101	MCE235	MS-31
C64	100		1469-100	TCN-100	22R5T1	CM-15E-101	MCE235	MS-31
C65	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C66	330		ADM-15-331	CPR-330J	C10F331J	DM-10-331		MS-333
C67	200		1469-200	TCN-200	22R5T2	CM-15E-201	MCE237	MS-32

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			CADRE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Power Sw.	5000Ω	101007	B-11, KR2 or (F2-5000, SU204, KR2)		Q13-114, 76-2, or (BU2, CF60, SS14, WF)*	UA53A, SF1000, US42 or (RU53A, SL38, SF1000, US42) or (U-12, US27)
R2	Squelch & Squelch Switch	5000Ω	101189	B-11, KR1 or (F2-5000, SU204, KR1)		Q13-114, 76-1, or (BU2, CF60, SS14, GC)*	UA53A, SF1000, US41 or (RU53A, SL38, SF1000, US41) or (U-12, US26)

* "SNAPTROL"

PARTS LIST AND DESCRIPTION (CONTINUED)

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R48	10Ω Cold		FT10	#101086					

Cadre Part Number.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		CADRE PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Antenna	103325					
L2	RF	103326					
L3	1st Rec. Osc.	103327					
L4	1st IF (1680KC)	101399					
L5	2nd IF (455KC)	101400					
L6	3rd IF (455KC)	101018					
L7	4th IF (455KC)	101019					
L8	RF Choke (50uh)	1008-500		72F475AP		TG248	
L9	RF Choke (50uh)	1008-500		72F475AP		TG248	
L10	Buffer	103312					
L11	Transmit	103313					
L12	Final	103314					
L13	Bandpass Filter	103315					
L14	Antenna Loading	103316					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	CADRE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L15	480MA	.5Ω	200MH	101056					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	CADRE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .150A	12.5VAC @ .75A (AC)		101110	P-2959	P-8130	26F67	F-25X	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	CADRE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	4	1	101020					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	CADRE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	100Ω CT	25Ω CT SEC. 2 3-4Ω	104088 *					* Alternate Part #101021

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		CADRE PART No.	QUAM PART No.	
SP1	6" x 2" PM 3-4Ω	101025		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			CADRE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1A 250V	101437		312001.	155020	AGC1	HDJ
M2	3AG	1/4A 125V S/B	101095		313.250	121004	MDL 1/4	4405

MISCELLANEOUS

ITEM No.	PART NAME	CADRE PART No.	NOTES
M3	Transfilter	101897	455KC Ceramic Filter (Clevite TF-01A)
M4	Transfilter	101897	455KC Ceramic Filter (Clevite TF-01A)
M5	Crystal		Receive. Part Numbers are consecutive from 104121 for Channel 1 to 104143 for Channel 23.
M6	Crystal		Transmit. Part numbers are consecutive from 103377 for Channel 1 to 103399 for Channel 23.
M7	Crystal	101116	2nd Receive Osc. (2135KC)
M8	Diode	101153	Det. -AVC (1N90)
M9	Diode	101879	Noise Limiter (1N34)
M10	Diode	101154	Squelch Gate (1N270)
M11	Switch	104018	Channel Selector. (5-Position Wafer)
M12	Relay	103335	Transmit-Receive (4PDT Enclosed)
M13	Microphone Ass'y.	104092	Includes Push-To-Talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Knob - Channel Selector	104030	Microphone Plug	101102
Knob - Volume & Squelch	104031	Power Plug	101642
Front Panel	104207	AC Cord & Socket	101826
Rubber Feet	101035	DC Cord & Socket	101827

CADRE MODEL 515

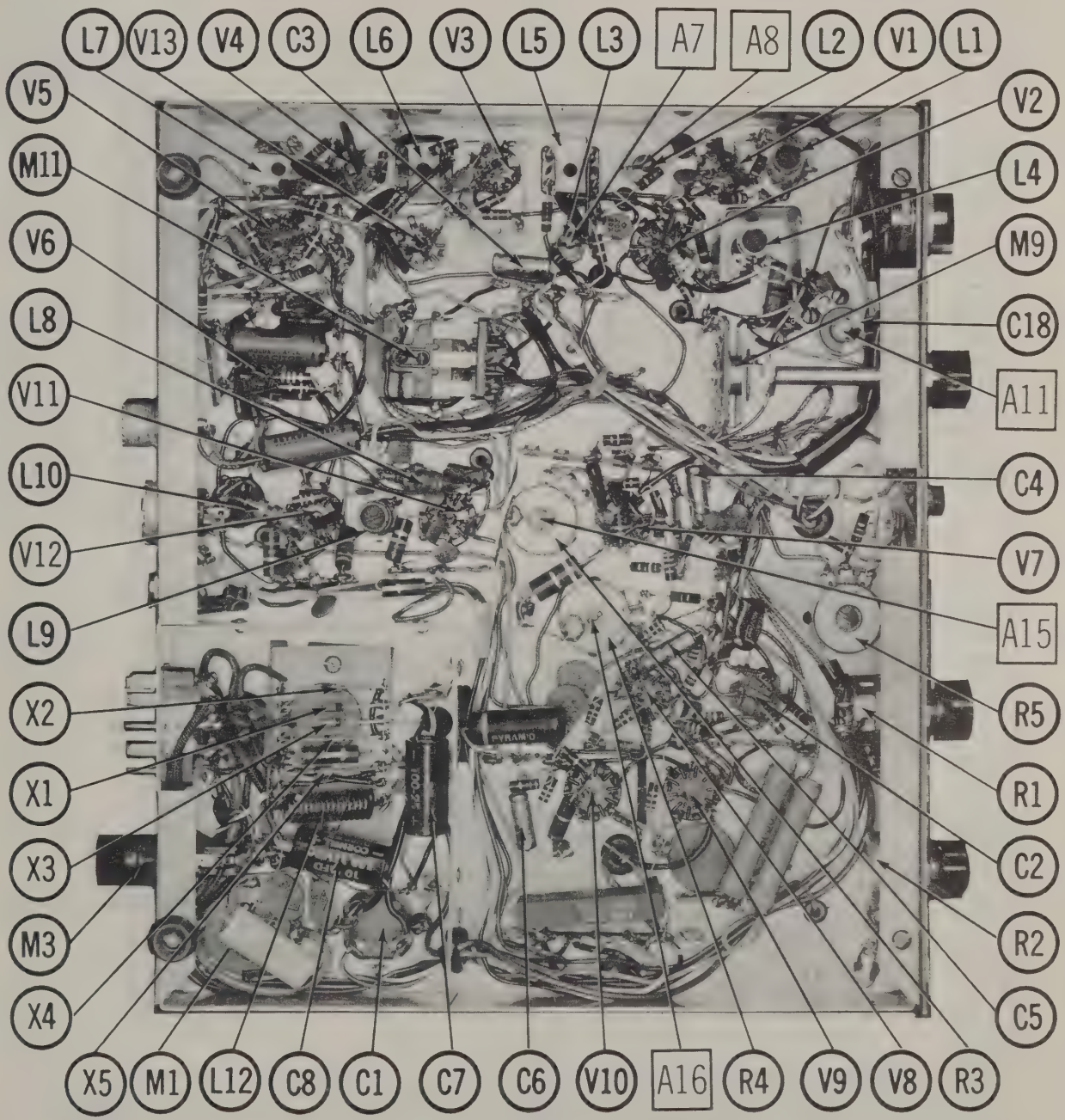
TRADE NAME:	Globe Master Model 65-220
SUPPLIER:	For Current Address, see Master Index
TYPE SET:	12 Tube Transceiver
POWER SUPPLY:	110 - 120 Volts AC, 60 Cycles (or) 12 Volt Storage Battery
RATING:	100 Watts, . 88 Amp. @ 117VAC (or) 7.3 Amp. @ 12.6 VDC
TUNING RANGE:	Any 11 CB Channel 1 thru 23 Receiver may be continuously tuned

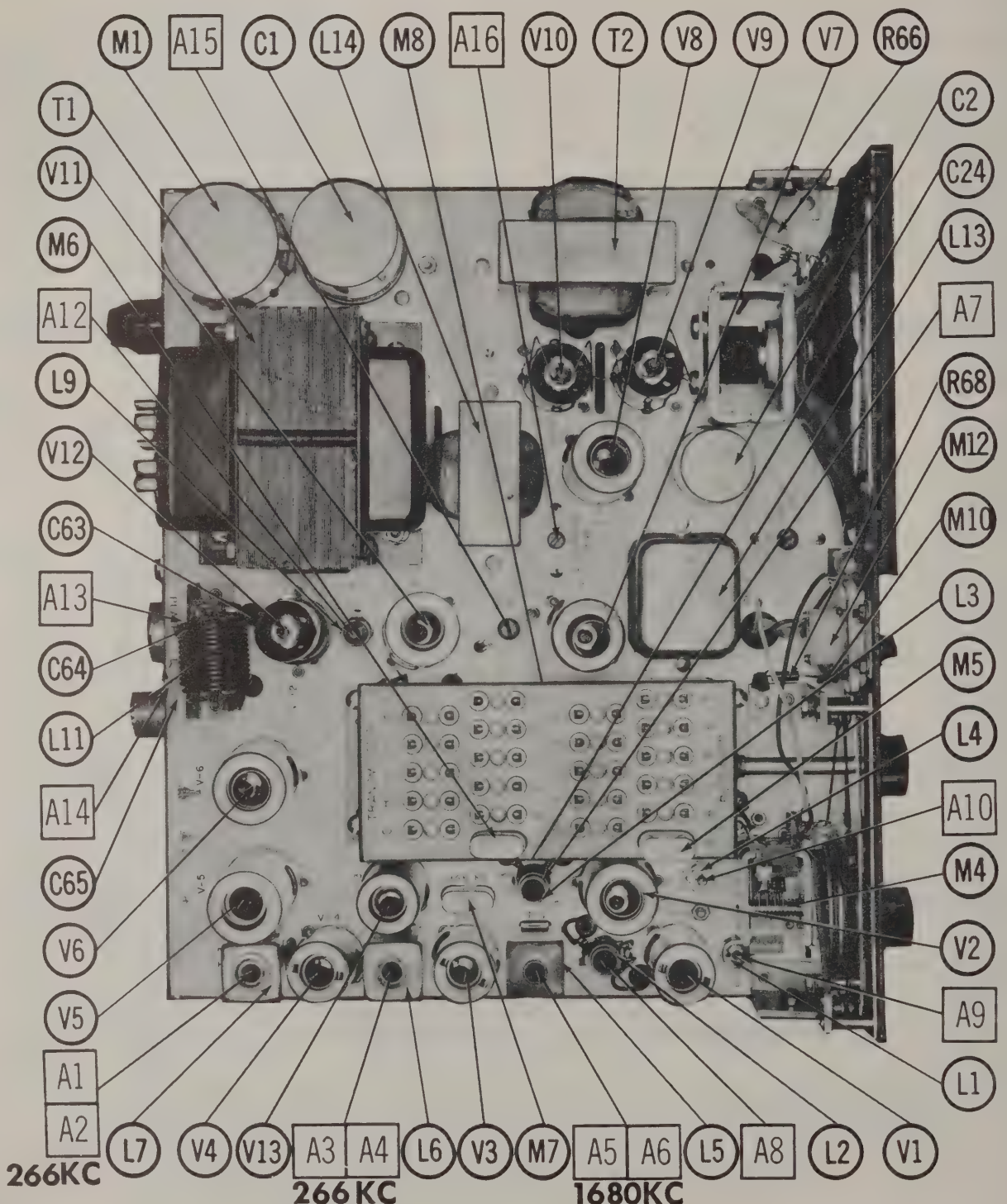
RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12BZ6	1.8meg	56Ω	FIL	FIL	†3200Ω	†8600Ω	0Ω		
V2	6BR8A	47K	†24K	0Ω	FIL	FIL	†3500Ω	†60K	1200Ω	2.7meg
V3	12BE6	82K	180Ω	FIL	FIL	†2700Ω	†100K	12Ω		
V4	12BZ6	3.5meg	180Ω	FIL	FIL	†10K	†70K	0Ω		
V5	6BJ8	210K	2.3meg	6800Ω	FIL	FIL	400K	†275K	220K	◓5600Ω
V6	6EA8	†200K	1.7meg	†20K	FIL	FIL	†550K	0Ω	†60K	1.7meg
V7	6BN8	550K	56K	60K	FIL	FIL	550K	†156K	75K	◓ 2200Ω
V8	12AX7	†520K	470K	3300Ω	FIL	FIL	†520K	270K	3300Ω	NC
V9	6BQ5 EL84	NC	470K	150Ω	FIL	FIL	NC	†342Ω	NC	†342Ω
V10	6BQ5 EL84	NC	470K	150Ω	FIL	FIL	NC	†342Ω	NC	†342Ω
V11	12BY7A	◓ 7Ω	68K	0Ω	FIL	FIL	NC	†2800Ω	†25K	0Ω
V12	6EM5	†7500Ω	TP	NC	FIL	FIL	32K	◓ 330Ω	NC	†2000Ω
V13	OA2	NC	0Ω	NC	0Ω	†2700Ω	NC	0Ω		

ALL MEASUREMENTS MADE IN RECEIVE-XTAL POSITION UNLESS OTHERWISE DESIGNATED.
◓ MEASURED WITH TRANSMIT-RECEIVE RELAY (M11) DEPRESSED.
† MEASURED FROM OUTPUT OF X2 AND X4. NC NO CONNECTION. TP TIE POINT
■ MEASURED IN TUNE POSITION.

© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY520


L7
V13
V4
C3
L6
V3
L5
L3
A7
A8
L2
V1
L1
V5
V2
M11
L4
V6
M9
L8
C18
V11
A11
L10
C4
V12
V7
L9
A15
X2
R5
X1
R1
X3
C2
M3
R2
X4
C5
X5
M1
L12
C8
C1
C7
C6
V10
A16
R4
V9
V8
R3


M1
A15
C1
L14
M8
A16
V10
T2
V8
V9
V7
R66
T1
V11
M6
A12
L9
V12
C63
A13
C64
L11
A14
C65
V6
V5
A1
A2
C2
C24
L13
A7
R68
M12
M10
L3
M5
L4
A10
M4
V2
A9
L1
L7
V4
V13
A3
A4
L6
V3
M7
A5
A6
L5
A8
L2
V1
266KC
266KC
1680KC

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A6.....GENERAL CEMENT #8282, 8606, 8606L
WALSCO #2526, 2543, 2544
A7 thru A10, A12... GENERAL CEMENT #8271, 8722
WALSCO #2519
A11, A13, A14..... GENERAL CEMENT #5000, 5003, 5006
WALSCO #2515, 2516, 2518

RECEIVER ALIGNMENT

Connect a VTVM, set to read negative voltage to point (A), unless otherwise designated.
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.
Place receiver switch (M9) in Xtal Position, unless otherwise designated.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 9 of V2 (1st Mixer), low side to chassis. (1680KC Unmod.)	Any	A1, A2, A3, A4, A5, A6	Adjust for maximum indication.
	11 (27.085MC)	A7	Connect VTVM to pin 1 of V2 (1st Rec. Osc.). Adjust for maximum indication then back off 1/2 turn.
High side thru .1mfd to antenna jack, low side to chassis (27.085MC Unmod.)	11 (27.085MC)	A8, A9	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis (26.965MC Unmod.)	1 (26.965MC)	A10	Place receiver switch (M9) in tune position and set dial pointer to Ch. 1. Adjust for maximum indication. (Choose the peak with the MINIMUM inductance).
High side thru .1mfd to antenna jack, low side to chassis (27.225MC Unmod.)	22 (27.225MC)	A11	Place receiver switch (M9) in Tune position and set dial pointer to Ch. 22. Adjust for maximum indication. Readjust A10 and A11.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

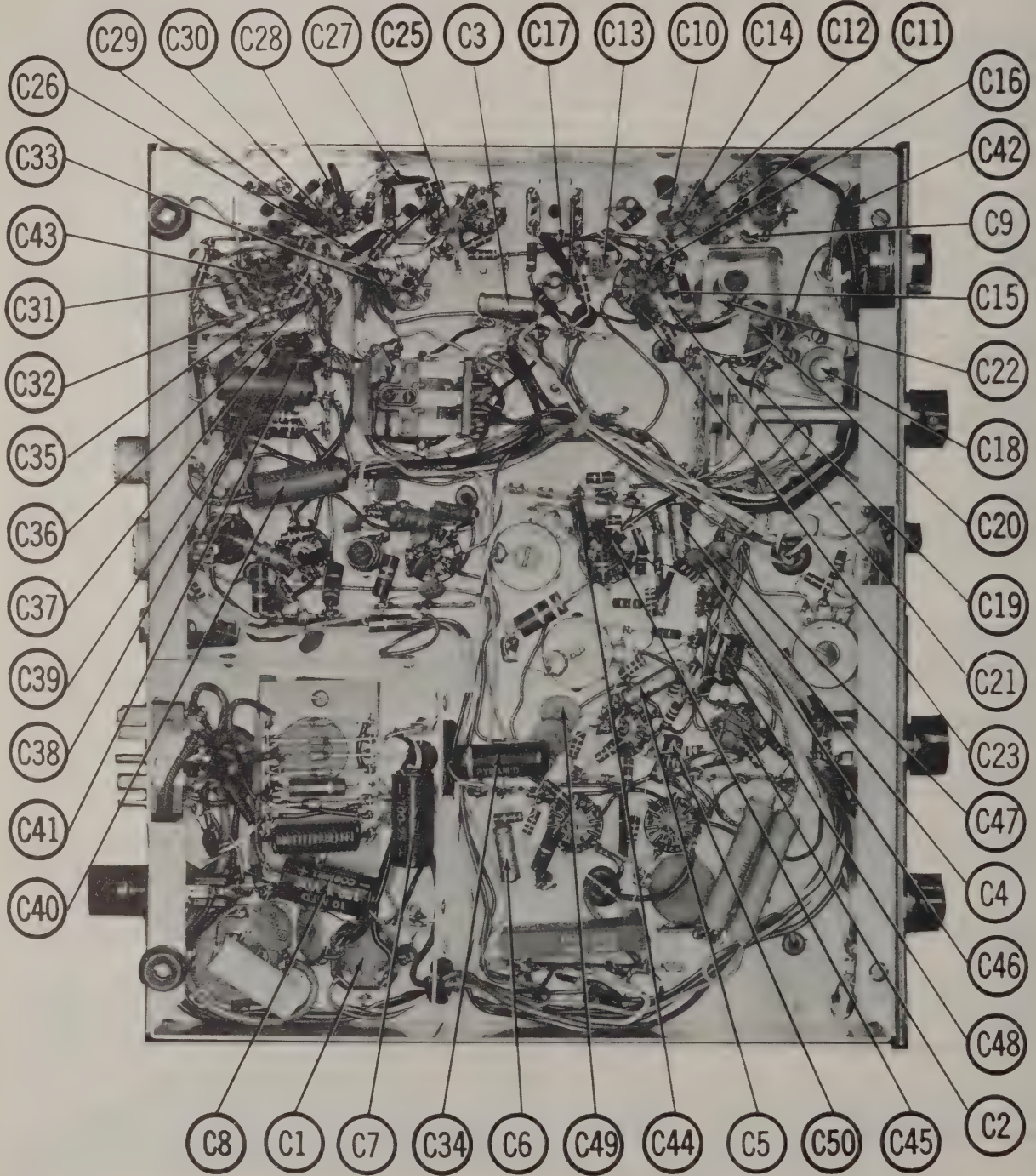
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

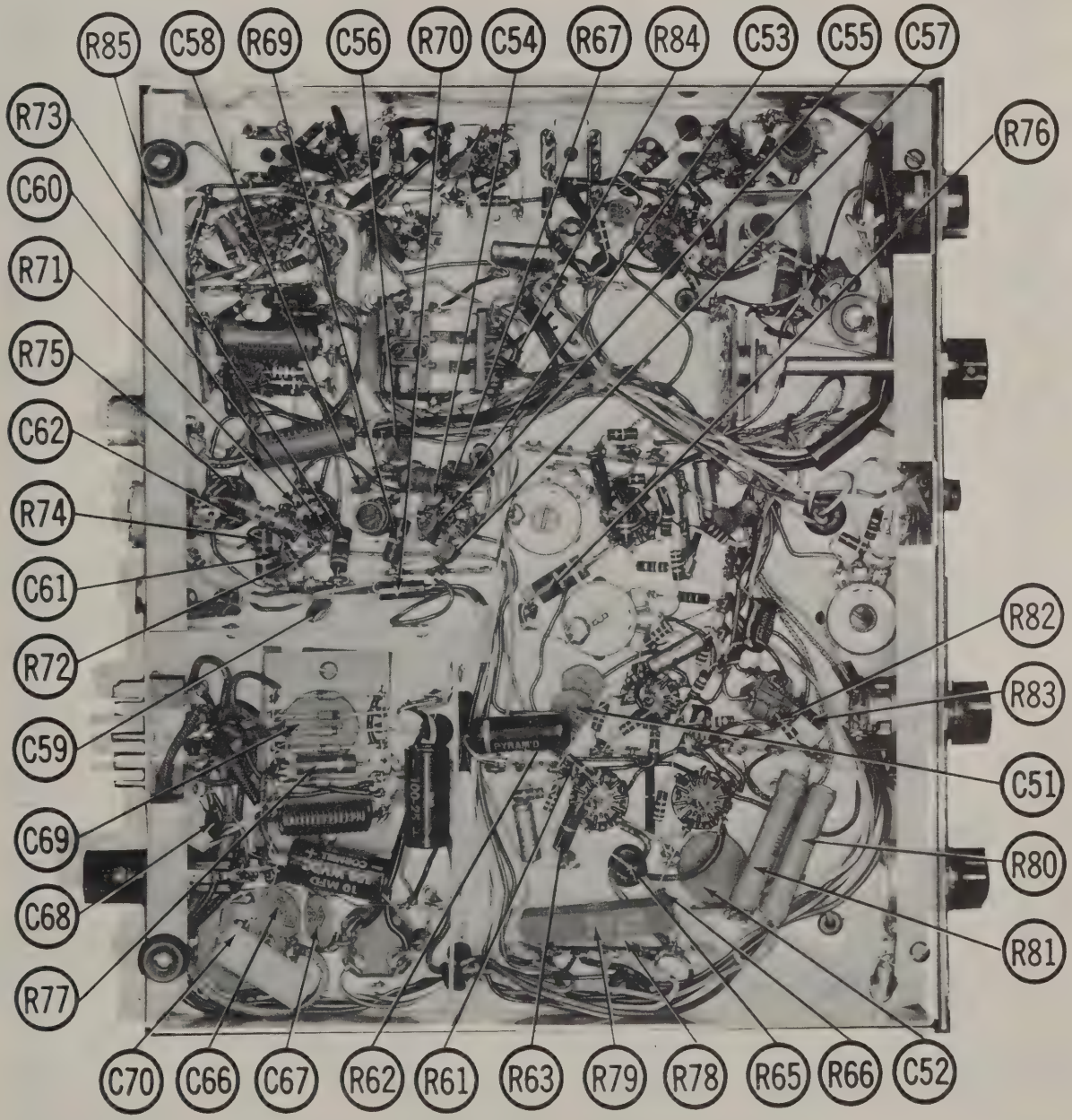
Connect either a 50Ω dummy load or the normally used antenna system. Set channel selector to the usable channel nearest channel 11 (27.085MC)

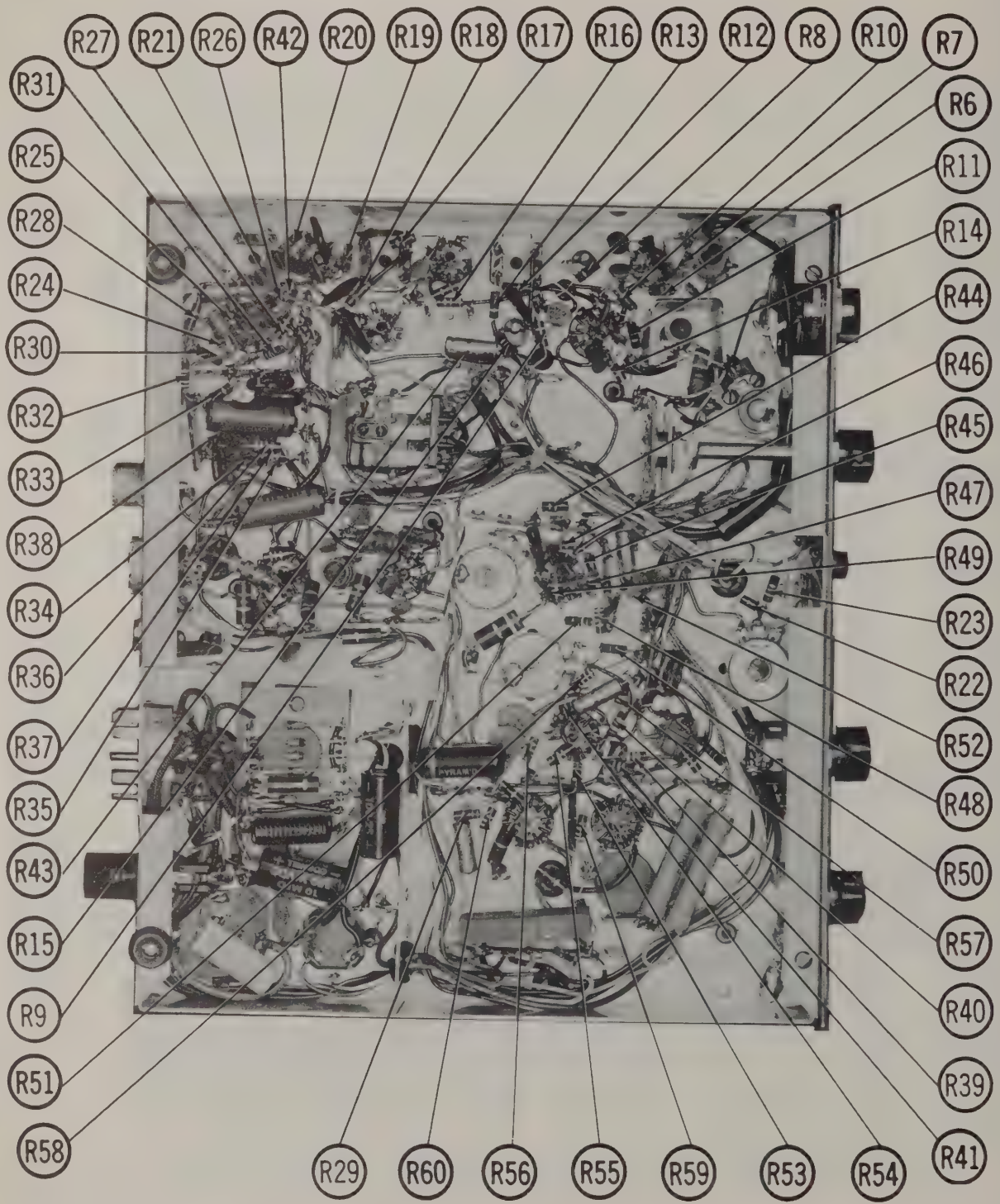
INDICATOR	ADJUST	REMARKS
VTVM, set to read negative voltage to point (B).	A12	Key transmitter. Adjust for -2 volts.
VTVM between pin 1 and pin 4 of accessory socket.	A13	Key transmitter. Adjust for MINIMUM indication.
Field strength meter or RF Wattmeter.	A14	Key transmitter. Adjust for maximum output. Readjust A13 and A14 without exceeding 2.7 volts (5 Watts) across pins 1 and 4 of the accessory socket.
Oscilloscope connected to indicate modulation percentage.	A15, A16	Set A16 at the maximum CCW position. Key transmitter. Adjust A15 for 100% modulation with normal speech. Adjust A16 for desired clipping. Readjust A15.

"S" METER ZERO ADJUSTMENT

Short the antenna input to ground and adjust R5 for a zero reading on the "S" meter


C29
C30
C28
C27
C25
C3
C17
C13
C10
C14
C12
C11
C26
C33
C43
C31
C32
C35
C36
C37
C39
C38
C41
C40
C16
C42
C9
C15
C22
C18
C20
C19
C21
C23
C47
C4
C46
C48
C2
C8
C1
C7
C34
C6
C49
C44
C5
C50
C45


R85
C58
R69
C56
R70
C54
R67
R84
C53
C55
C57
R73
C60
R71
R75
C62
R74
C61
R72
C59
C69
C68
R77
R76
R82
R83
C51
R80
R81
C70
C66
C67
R62
R61
R63
R79
R78
R65
R66
C52


R27
R21
R26
R42
R20
R19
R18
R17
R16
R13
R12
R8
R10
R7
R31
R6
R25
R11
R28
R14
R24
R44
R30
R46
R32
R45
R33
R47
R38
R49
R34
R23
R36
R22
R37
R52
R35
R48
R43
R50
R15
R57
R9
R40
R51
R39
R58
R41
R29
R60
R56
R55
R59
R53
R54

PARTS LIST AND DESCRIPTION

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V1	RF Amp.	12BZ6
V2	1st Mixer-1st Rec. Osc.	6BR8A
V3	Converter	12BE6
V4	IF Amp.	12BZ6
V5	Det.-AVC-Noise Limiter-1st Speech Amp.	6BJ8
V6	Squelch-1st AF Amp.	6EA8
V7	2nd Speech Amp.-Speech Clipper	6BN8
V8	2nd AF Amp.-Phase Inv.	12AX7 (ECC83)*
V9	Output - Modulator	6BQ5/EL84
V10	Output - Modulator	6BQ5/EL84
V11	Transmit Osc.-Tripler	12BY7A
V12	Transmit Final	6EM5
V13	Voltage Regulator	OA2

* Alternate Type

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	130MA	3700-153	1N3194	1N3194 or 1N2862	F4 or 40H
X2	130MA	3700-153	1N3194	1N3194 or 1N2862	F4 or 40H
X3	130MA	3700-153	1N3194	1N3194 or 1N2862	F4 or 40H
X4	130MA	3700-153	1N3194	1N3194 or 1N2862	F4 or 40H
X5	95MA	3700-153	1N3194	1N3194 or 1N2862	F4 or 40H

or FW400

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Globe Master PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲20	450	1106-040	AFH3-42	CC0330	XC3-29	TMS3739	FP446	TVL-3784
B	▲40	450							
C	■30	450							
C2A	10	350	1106-035	AFH3-27	CC0210	XC3-7	TMT3423	FP330.5A	TVL3639.6
B	■10	350							
C	▲10	350							
C3	10	25	1106-032	CRE607A	NLW10-25	MT1-5	MLV10-25	TT25X10	TE-1204
C4	10	25	1106-032	CRE607A	NLW10-25	MT1-5	MLV10-25	TT25X10	TE-1204
C5	10	25	1106-032	CRE607A	NLW10-25	MT1-5	MLV10-25	TT25X10	TE-1204
C6	10	25	1106-032	CRE607A	NLW10-25	MT1-5	MLV10-25	TT25X10	TE-1204
C7	100	25	1106-019	PRS-1270	BR100-25	QT1-23	TD-100-25	TC2501	TVA-1207
C8	10	150		PRS-1410	BBR10-150	QT1-5	MLV10-150	TC42	TVA-1406

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C9	50 N1500			TCL-47				
C10	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C11	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C12	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C13	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C14	50 N1500			TCL-47				
C15	500		BPD-00047	DD-471	BYA10T47	CCD-471	B347	10TS-T47
C16	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C17	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C18	4.5-25 NPO	#1111-001		825-AZ				
C19	82 5%		ADM-15-820	CPR-82J	5RP10Q82J	CM-15E-820J		MS-482
C20	39 NPO		NPO-DI 39	TCZ-39	C10Q39C	CCTO-390	CNO439	10TCC-Q39
C21	10 N750		N750-DI 10	DTN-10	C10Q1U	CCTN-100	CN7410	10TCU-Q10
C22	22 NPO		NPO-DI 22	DTZ-22	C10Q22C	CCTO-220	CNO422	10TCC-Q22
C23	8 N075	①						
C24	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C25	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C27	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C28	.1			DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C29	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C30	.005	(.01)†	BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C31	120		DI-120	D6-121	LA10T12-S3	CCD-121	CNO312	10TCC-T12
C32	.05 75V		TTD-05				TA150	TH-S50
C33	.1			DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C34	.1 200V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C35	200		DI-220	DD-221	LA10T22-S3	CCD-221	GP322	10TS-T22
C36	200		DI-220	DD-221	LA10T22-S3	CCD-221	GP322	10TS-T22
C37	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C38	.1 200V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C40	.1 200V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C41	.01	(.001)†	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C42	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C43	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C44	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C45	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C46	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C47	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C48	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C49	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C50	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C51	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C52	.01 1600V		DAC-27	DD16-103	HVE16S1		2HV-110	BL-S10
C53	22 N330			TCA-22				10TCS-Q22
C54	250		DI-220	DD-221	LA10T22-S3	CCD-221	GP322	10TS-T22
C55	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C56	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C57	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C58	100		DI-100	DD-101	LA10T1-S3	CCD-101	GP310	5GA-T10
C59	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C60	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C61	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C62	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C63	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C64	3-12	#1111-007		827B			ST553Z	
C65	80-480	#1111-006				46W-466		
C66	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C67	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C68A	800		DI-820	DD-821	LA10T82-C4	CCD-821	B382	10TS-T82
B	800		DI-820	DD-821	LA10T82-C4	CCD-821	B382	10TS-T82
C69	.01 1600V		DAC-27	DD16-103	HVE16S1		2HV110	BL-S10
C70	.47 100V	①						

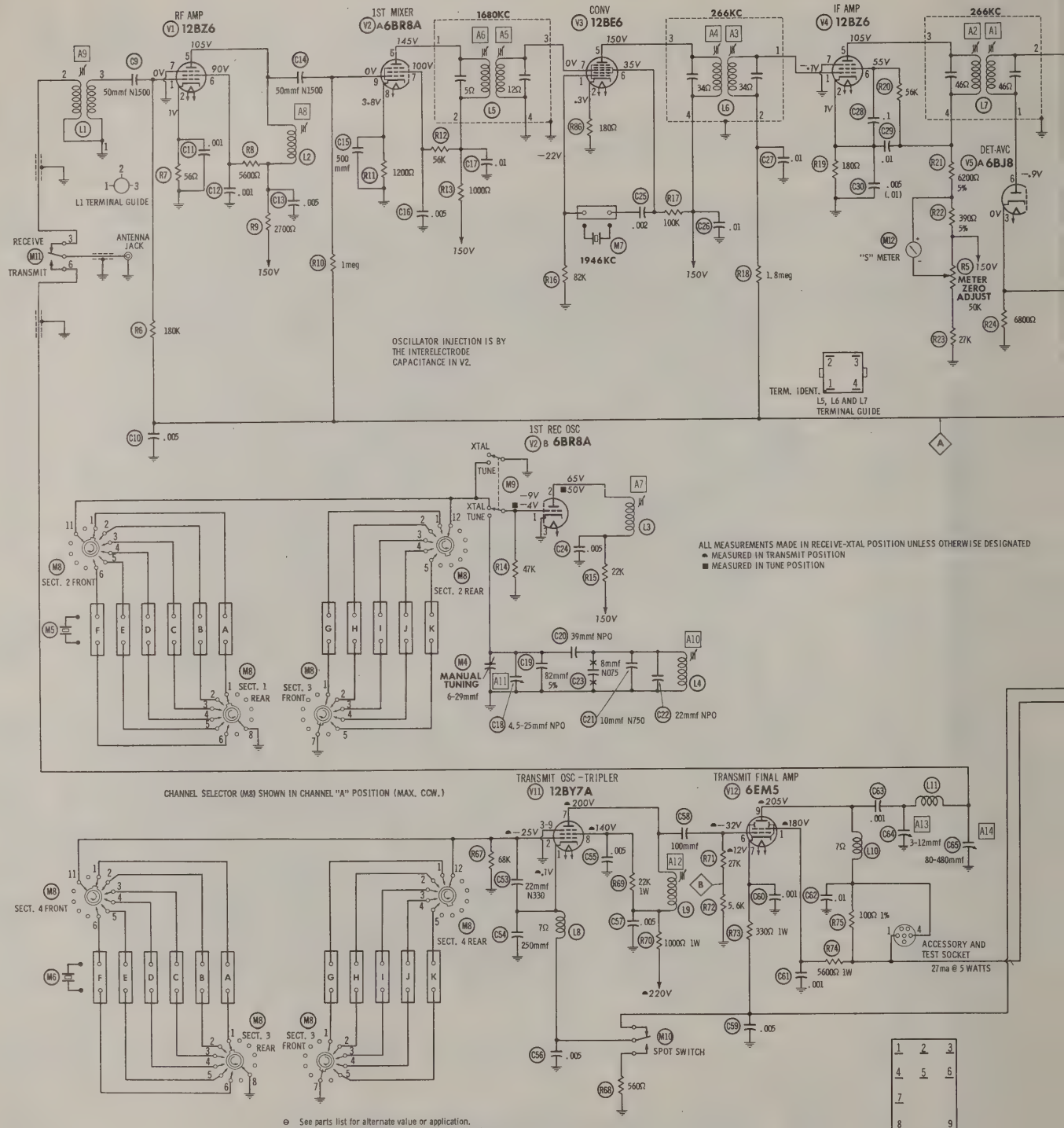
† Alternate Value.
① Not used in some versions.
Globe Master Part Number.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Globe Master PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	500K	2300-017	F2-500K, SU204, KR2 or (B-60, KR2)	A47-500K-Z, RS2, SWE-20	Q13-133, 76-2, or (BU2, CF25, SS1, WF)*	UA55A, SL3500, US42 or (RU55A, SL38, SL3500, US42) or (U-48, US27)
R2	Squelch	50K	2300-008	F1-50K, SU204 or (B-31)	A47-50K-S, RS2	Q11-123, or (BU2, CF12, SS3, DC1)*	UA54L, SL3500, or (RU54L, SL38, SL3500) or (U-35)
R3	Modulation Level	500K	2300-027	TT-59 or (F1-500K, SN010)	B47-500K-S	B11-133, TM4 or (BU11, CF16, SS6)*	UA55L, SN1000, or (RU55L, SL37, SN1000) or PTA55L
R4	Clipping Level	250K	2300-025	TT-50 or (F1-250K, SN010)	B47-250K-S	B11-130, TM4 or (BU11, CF15, SS6)*	UA254L, SN1000 or (RU254L, SL37, SN1000) or PTA35L
R5	"S" Meter Zero	50K	2300-028	TT-31 or (F1-50K, SN010)	B47-50K-S	B11-123, TM4 or (BU11, CF12, SS6)*	UA54L, SN1000 or (RU54L, SL37, SN1000) or (PTA54L)

* "SNAPTROL"

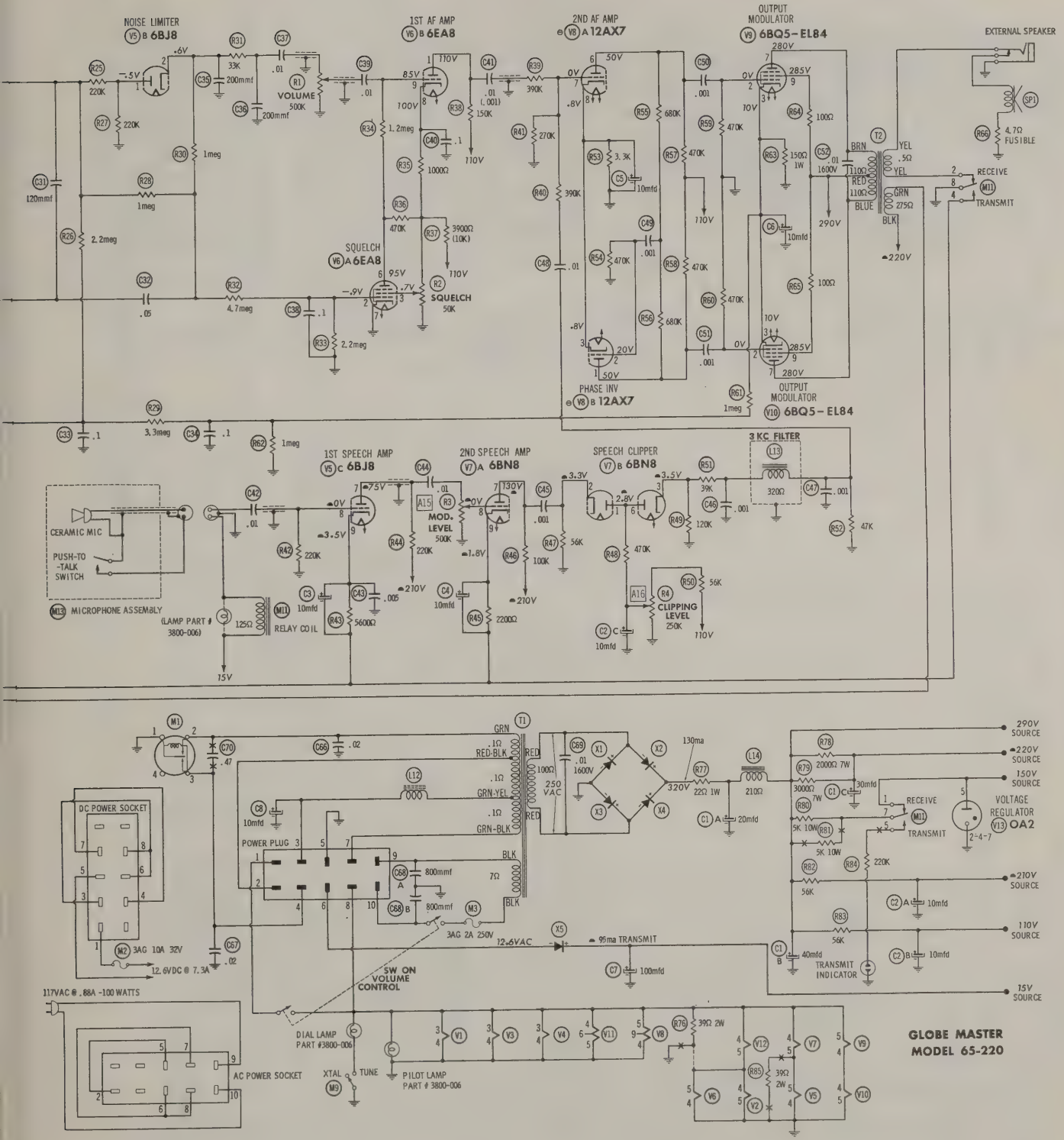


⊖ See parts list for alternate value or application.

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1964


NOISE LIMITER V5 B 6BJ8
1ST AF AMP V6 B 6EA8
2ND AF AMP V8 A 12AX7
OUTPUT MODULATOR V9 6BQ5-EL84
EXTERNAL SPEAKER
VOLUME 500K
SQUELCH V6 A 6EA8
SQUELCH 50K
PHASE INV V8 B 12AX7
OUTPUT MODULATOR V10 6BQ5-EL84
3 KC FILTER
1ST SPEECH AMP V5 C 6BJ8
2ND SPEECH AMP V7 A 6BN8
SPEECH CLIPPER V7 B 6BN8
MOD. LEVEL 500K
CLIPPING LEVEL 250K
CERAMIC MIC
PUSH-TO-TALK SWITCH
M12 MICROPHONE ASSEMBLY
(LAMP PART # 3800-006)
M11 RELAY COIL
RECEIVE
TRANSMIT
4.7Ω FUSIBLE
SP1
T2
BRN
YEL .5Ω YEL
RED 110Ω 110Ω
BLUE
GRN 275Ω
BLK
220V
290V
285V
280V
110V
100V
85V
95V
50V
20V
15V
DC POWER SOCKET
M2 3AG 10A 32V
12.6VDC @ 7.3A
117VAC @ .88A -100 WATTS
AC POWER SOCKET
POWER PLUG
T1
GRN
RED-BLK .1Ω
GRN-YEL .1Ω
GRN-BLK .1Ω
RED
BLK
7Ω
250 VAC
800mmf
3AG 2A 250V
12.6VAC
95ma TRANSMIT
SW ON VOLUME CONTROL
DIAL LAMP PART #3800-006
XTAL
TUNE
M9
PILOT LAMP PART # 3800-006
130ma
320V
210Ω
22Ω 1W
20mfd
100mfd
40mfd
30mfd
10mfd
2000Ω 7W
3000Ω 7W
5K 10W
220K
56K
39Ω 2W
290V SOURCE
220V SOURCE
150V SOURCE
270V SOURCE
110V SOURCE
15V SOURCE
VOLTAGE REGULATOR V13 OA2
TRANSMIT INDICATOR
GLOBE MASTER MODEL 65-220

PARTS LIST AND DESCRIPTION (CONTINUED)

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS
R66	4.7Ω 5W Fusible		F4.7	#1005-006
R78	2000Ω 7W	PW10-2000	7W-SQ-2000	#1009-002
R79	3000Ω 7W	PW10-3000	7W-SQ-3000	#1003-003

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS
R80	5000Ω 10W	PW10-5000	10W-SQ-5000	#1003-002
R81	5000Ω 10W	PW10-5000	10W-SQ-5000	#1003-002

Globe Master Part Number.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Globe Master PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Antenna	1400-128	TV-116	6250	RTC-8586	T232A	
L2	RF	1400-105	TV-112	6171A	RTC-8609	T216	
L3	Rec. Osc. Plate	1400-103	TV-112	6171A	RTC-8609	T216	
L4	Rec. Osc. Grid	1400-202					
L5	1st IF (1680KC)	1205-001A		1732			
L6	2nd IF (266KC)	1205-006A	BC-350	12-H1	RTC-8638	T604	
L7	3rd IF (266KC)	1205-007A	BC-351	12-H2	RTC-8639	T605	
L8	RF Choke (120uh)	1301-025	TV-195	6153	RTC-8585	T307	
L9	Transmit Osc.	1400-176					
L10	RF Choke (130uh)	1301-025	TV-195	6153	RTC-8585	T307	
L11	Final Tank (13 turns)	1400-177					
L12	Hash Choke(15 turns)	1300-021					

AUDIO CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Globe Master PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L13		320Ω	4.5HY	1300-007	C-2975①	C-1706①	20C47①	C-4X①	① Drill New Mounting Hole.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	SEC. 1	Globe Master PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @.88A	12.6VDC Input @ 3.7A	250VAC @.21A (AC)	1200-024					
	SEC. 2								
	12.6VAC @3.6A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	Globe Master PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	8500Ω CT	7500Ω	1203-017					
		SEC. 2						
		3-4Ω						

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Globe Master PART No.	QUAM PART No.	
SP1	3" x 5" PM 3-4Ω	4002-008	35A05	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				Globe Master PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	12	115~	4001-001	6371	G1601	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Globe Master PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	10A/ 32V			311010	155020	AGC 10	HHJ
M3	3AG	2A/ 250V	1500-011	1500-006	312002	342012	AGC 2	HKP

MISCELLANEOUS

ITEM No.	PART NAME	Globe Master PART No.	NOTES
M4	Tuning Capacitor	1105-042	Receiver Tuning (6-29mmf)
M5	Crystal		Receive. Specify Channel Number when ordering
M6	Crystal		Transmit. Specify Channel Number when ordering
M7	Crystal	3700-151	2nd Rec. Osc. (1946KC)
M8	Switch	2100-049	Channel Selector (4-Section, 11-Position, Wafer)
M9	Switch	2100-064	Xtal-Tune (Rotary)
M10	Switch	2100-051	Spot Switch (SPDT Pushbutton)
M11	Relay	3500-015	Transmit-Receive (3PDT 12 Volt)
M12	Meter	2500-018	"S" Meter (Type M303)
M13	Microphone Ass'y.	4000-011	Includes Push-to-talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Dial Pointer	3300-178
Knob - Tuning	2600-030
Knob - Channel Selector	2600-040
Knob - Volume, Squelch, Xtal.-Tune	2600-035
Decorative Name Plate	1800-031

ITEM	PART No.
Labeled Trim Panel	1801-007
Tuning Dial Panel	1801-006
Speaker Grille	1800-055
Front Panel	1800-054
Cabinet	1700-045

WIRING DATA

General-use Hook-up Wire .... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors

Shielded Antenna Lead ..... Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)

Coiled Microphone Cable ..... Use BELDEN No. 8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene)
8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)

Ignition Noise Suppression .... Use BELDEN No. 7300-Series Spark-Plug Sets

Bonding Strap ..... Use BELDEN No. 8661 (3/8 In.)

TRADE NAME:	Hallicrafters Models CB-5 Mark II HA-14 (Portable Power Supply & Charger) P-5-120 (AC Power Supply)
SUPPLIER:	For Current Address, see Master Index
TYPE SET:	3 Tube, 18 Transistor Transceiver
POWER SUPPLY:	12 Volt Storage Battery (or) 110 - 120 Volts AC, 60 Cycles (Alternate)
RATING:	1.8 Amp. @ 12.6VDC (Trans.) .32 Amp. @ 12.6VDC (Rec.)
TUNING RANGE:	Any 6 CB Channels 1 thru 23.

ALIGNMENT INSTRUCTIONS

A1 thru A6, A8, A9.....	GENERAL CEMENT #5907, 8607, 8727 WALSCO #2515
A7, A10 thru A16.....	GENERAL CEMENT #8606, 9295, 8282 WALSCO #2526, 2543, 2544

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage to point (A).
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator to the lowest level consistent with a clear indication on the VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .1mfd to base of X4 (2nd Mixer) low side to ground. Tune to 455KC Unmod.	Any	A1 thru A6	Adjust for maximum output.
High side thru .1mfd to base of X2 1st Mixer, low side to ground. Tune to 1650KC Unmod.	Any	A7	Adjust for maximum output.
Across antenna jack. Tune to 27.085MC Unmod.	11 (27.085MC)	A8 thru A13	Adjust for maximum output.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

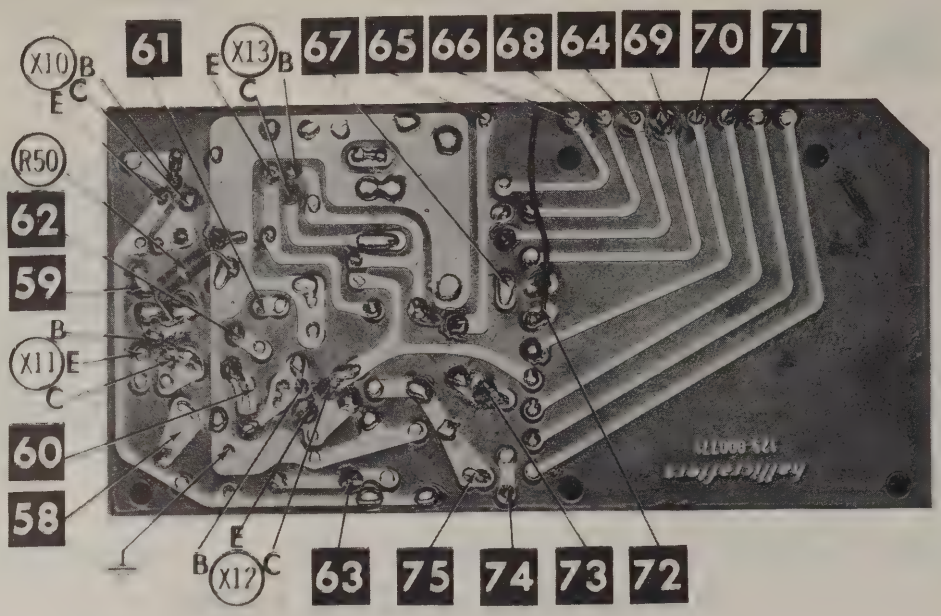
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

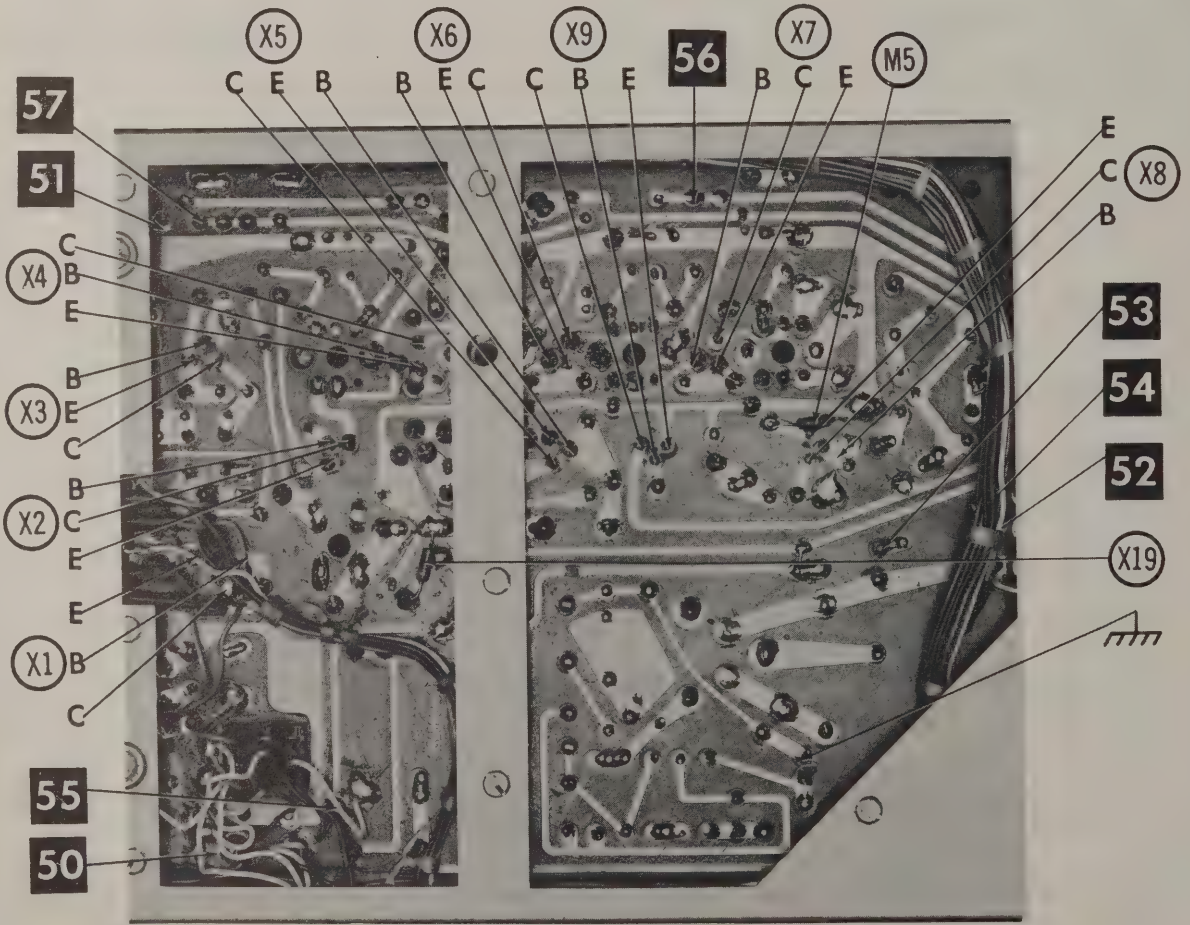
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50Ω dummy load or the normally used antenna system. Set channel selector to the usable channel nearest channel 11 (27.085MC).

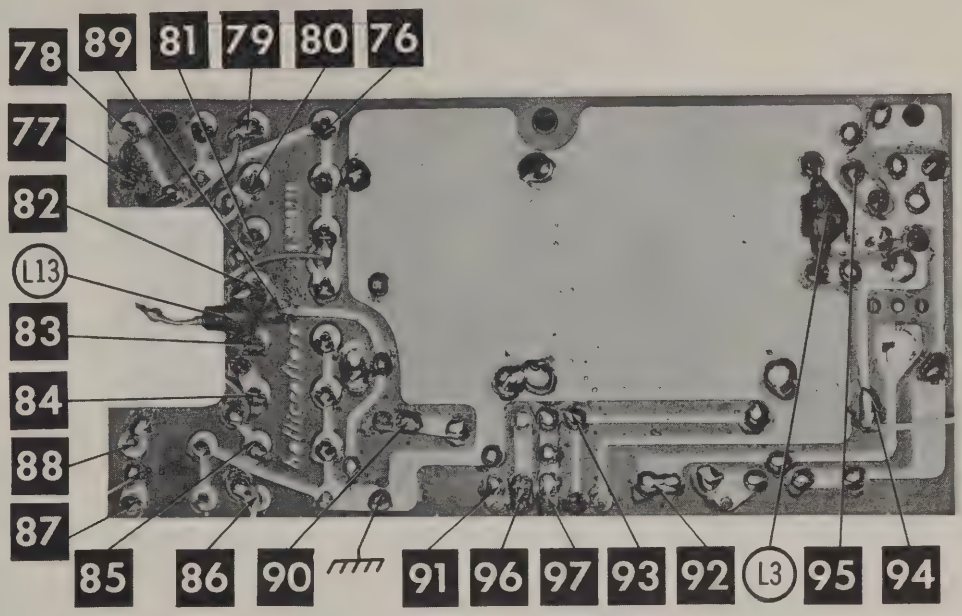
	CHANNEL	ADJUST	REMARKS
Field strength meter or pilot light dummy load.	11 (27.085MC)	A14, A15	Key transmitter. Adjust for maximum indication. Set A14 just below peak. Check all channels to be sure oscillator starts.
Any receiver tuned to 54MC	Any	A16	Key transmitter. Adjust for MINIMUM interference on receiver.

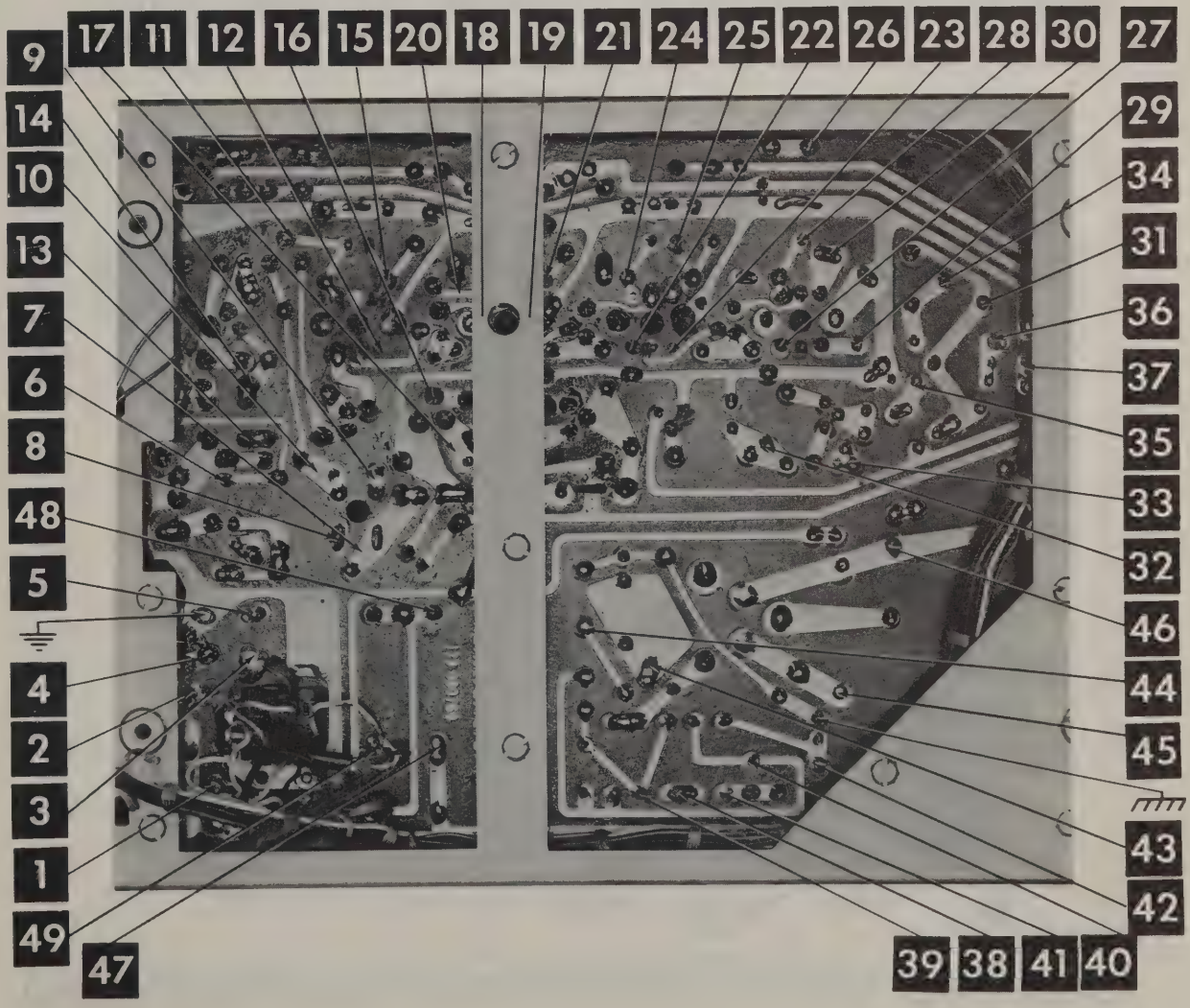
© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY521

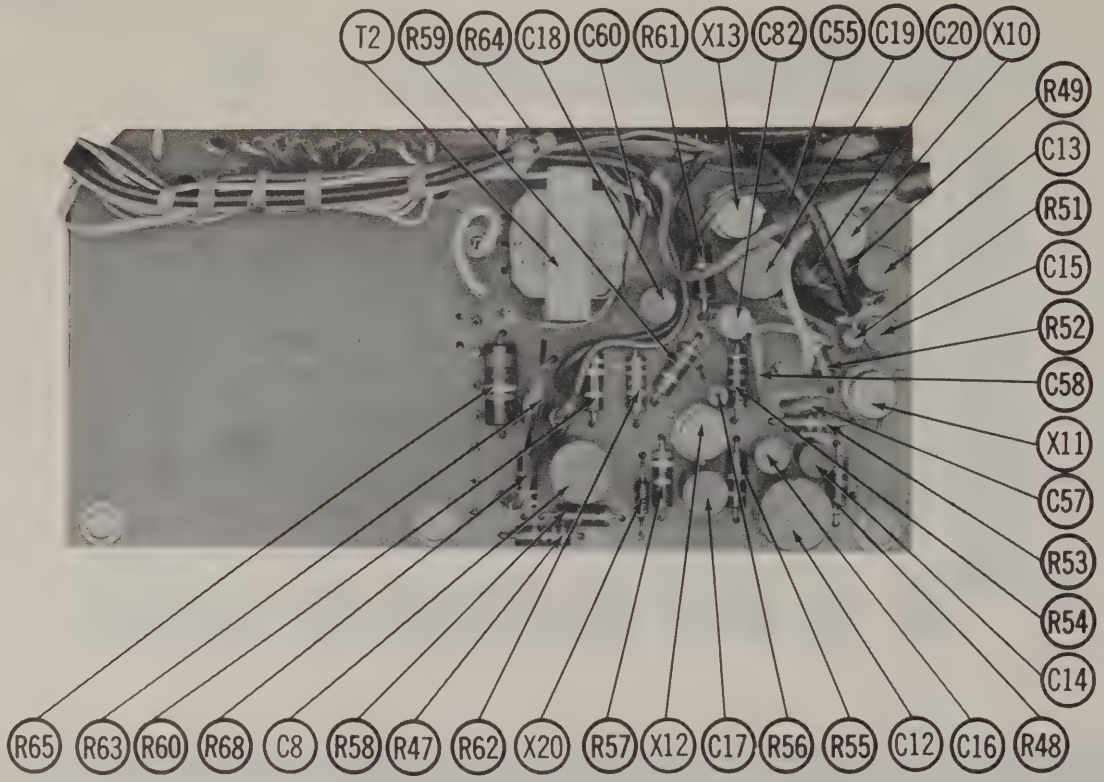


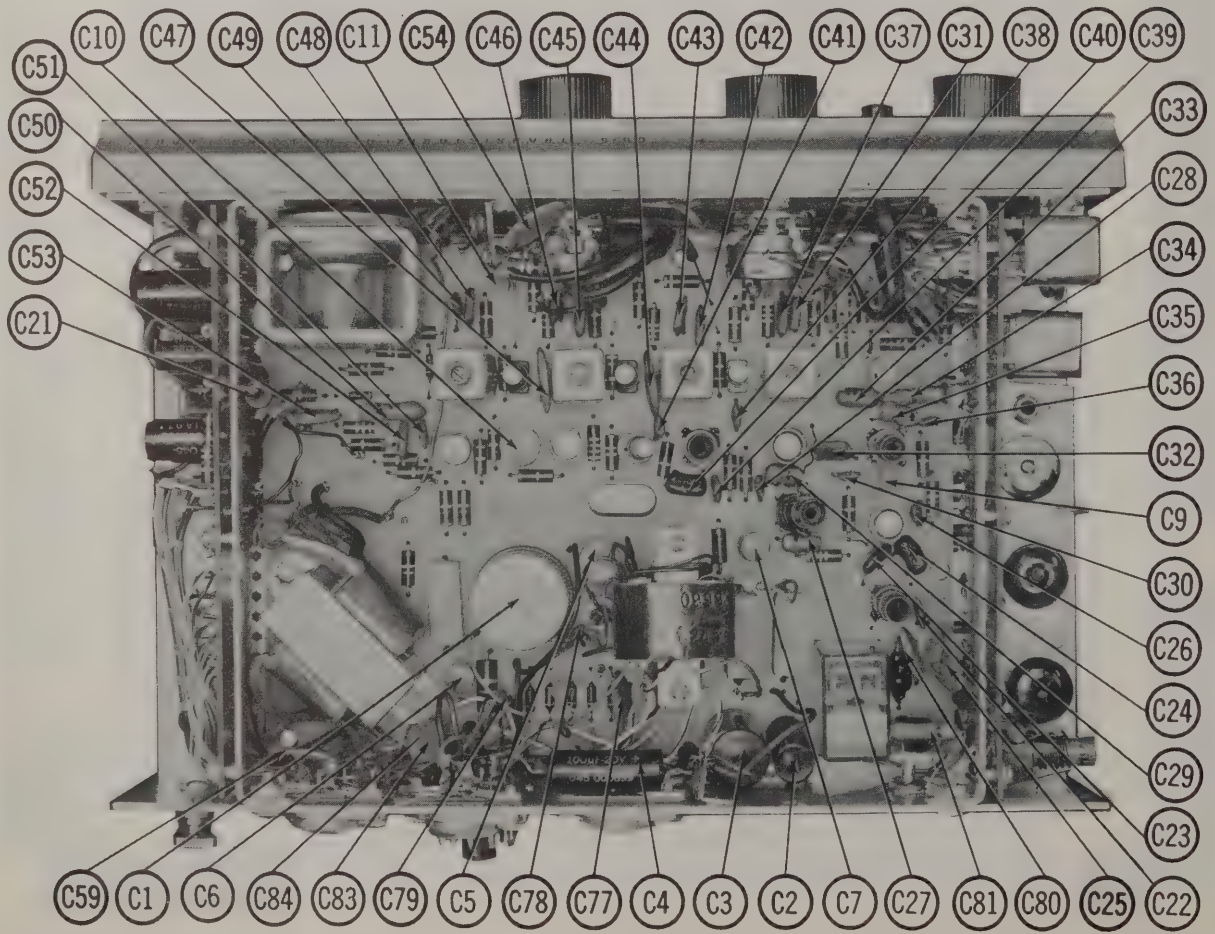


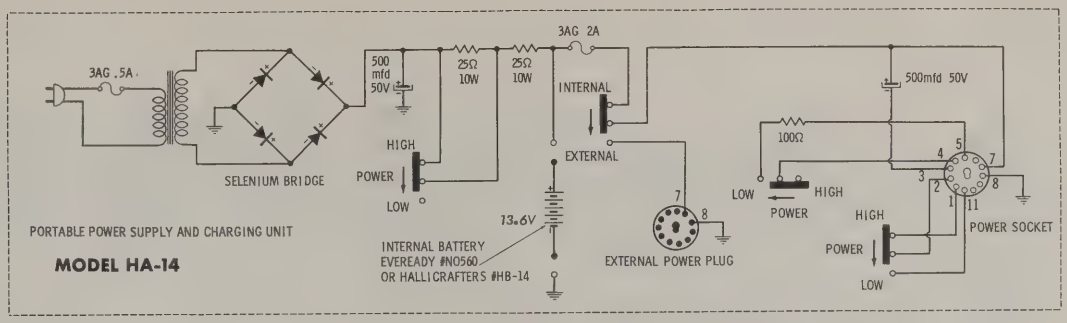
A Howard W. Sams CIRCUITRACE® Photo


78
89
81
79
80
76
77
82
L13
83
84
88
87
85
86
90
91
96
97
93
92
L3
95
94

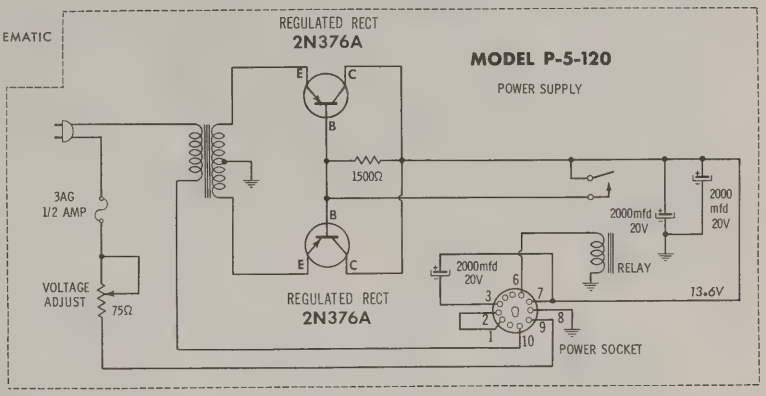

17
11
12
16
15
20
18
19
21
24
25
22
26
23
28
30
27
9
14
10
13
7
6
8
48
5
4
2
3
1
49
47
29
34
31
36
37
35
33
32
46
44
45
43
42
39
38
41
40

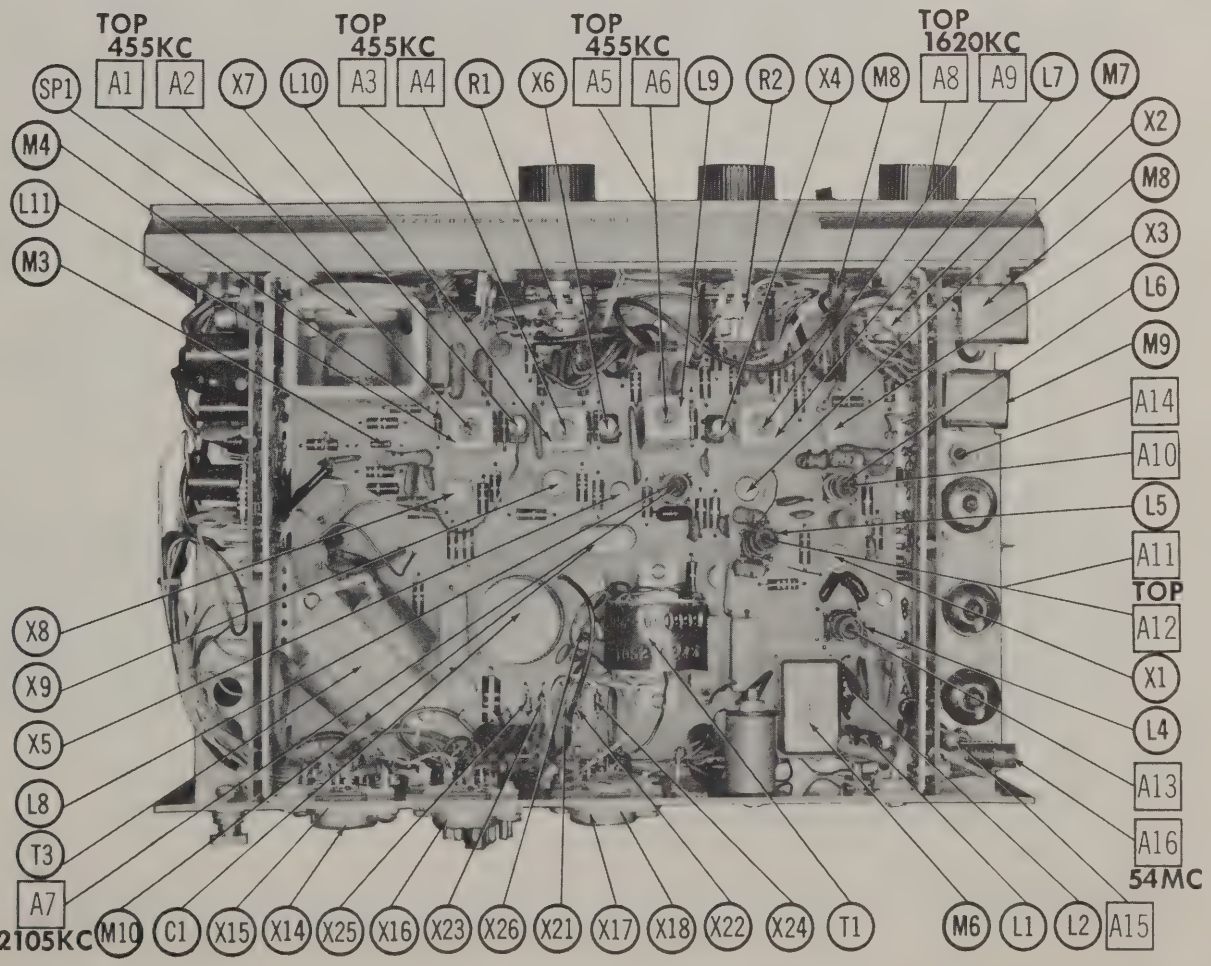

T2
R59
R64
C18
C60
R61
X13
C82
C55
C19
C20
X10
R49
C13
R51
C15
R52
C58
X11
C57
R53
R54
C14
R65
R63
R60
R68
C8
R58
R47
R62
X20
R57
X12
C17
R56
R55
C12
C16
R48

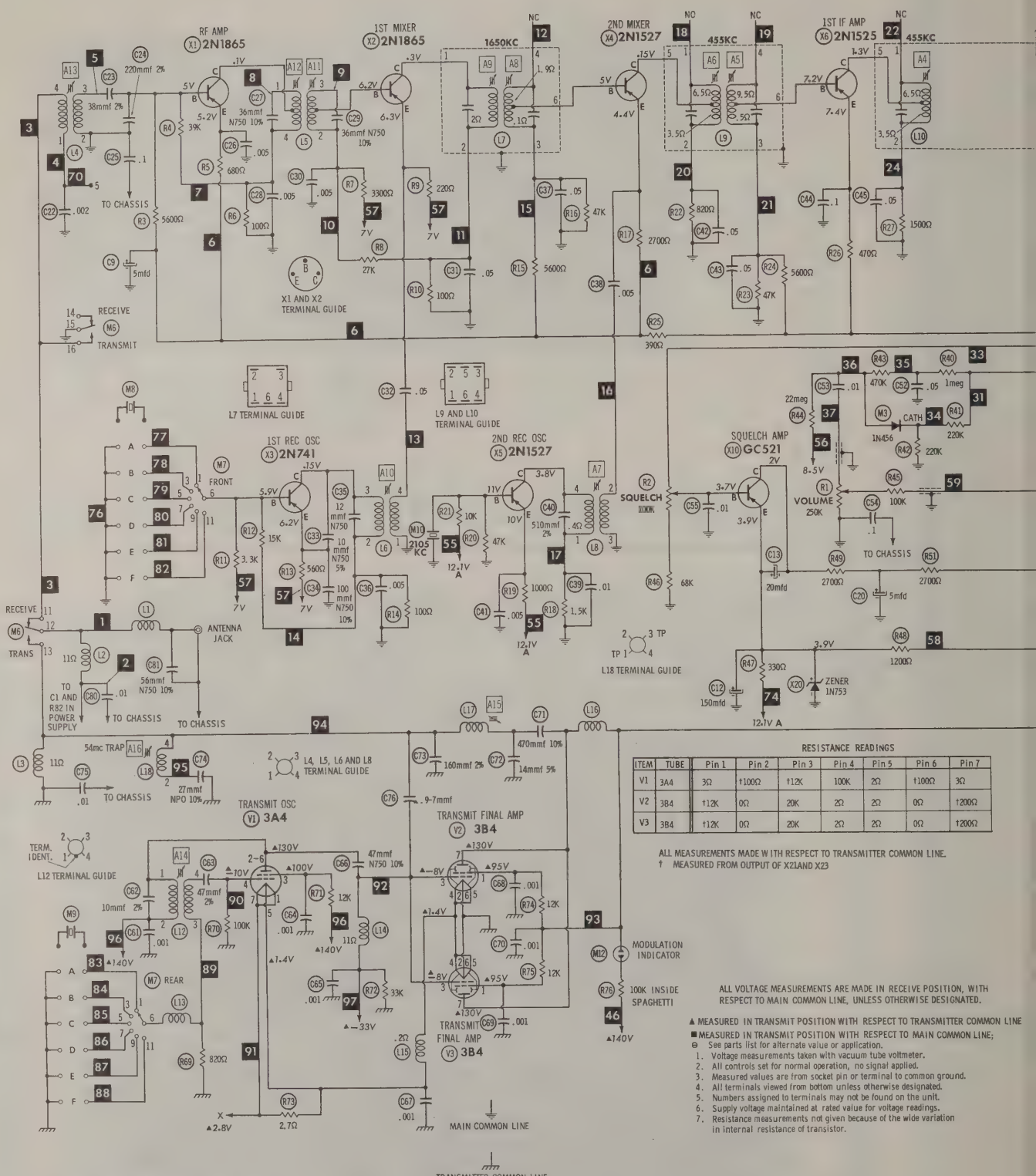

C10
C47
C49
C48
C11
C54
C46
C45
C44
C43
C42
C41
C37
C31
C38
C40
C39
C51
C50
C52
C53
C21
C33
C28
C34
C35
C36
C32
C9
C30
C26
C24
C29
C23
C59
C1
C6
C84
C83
C79
C5
C78
C77
C4
C3
C2
C7
C27
C81
C80
C25
C22



A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964







RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	3A4	3Ω	†100Ω	†12K	100K	2Ω	†100Ω	3Ω
V2	3B4	†12K	0Ω	20K	2Ω	2Ω	0Ω	†200Ω
V3	3B4	†12K	0Ω	20K	2Ω	2Ω	0Ω	†200Ω

ALL MEASUREMENTS MADE WITH RESPECT TO TRANSMITTER COMMON LINE.
† MEASURED FROM OUTPUT OF X2 LAND X3

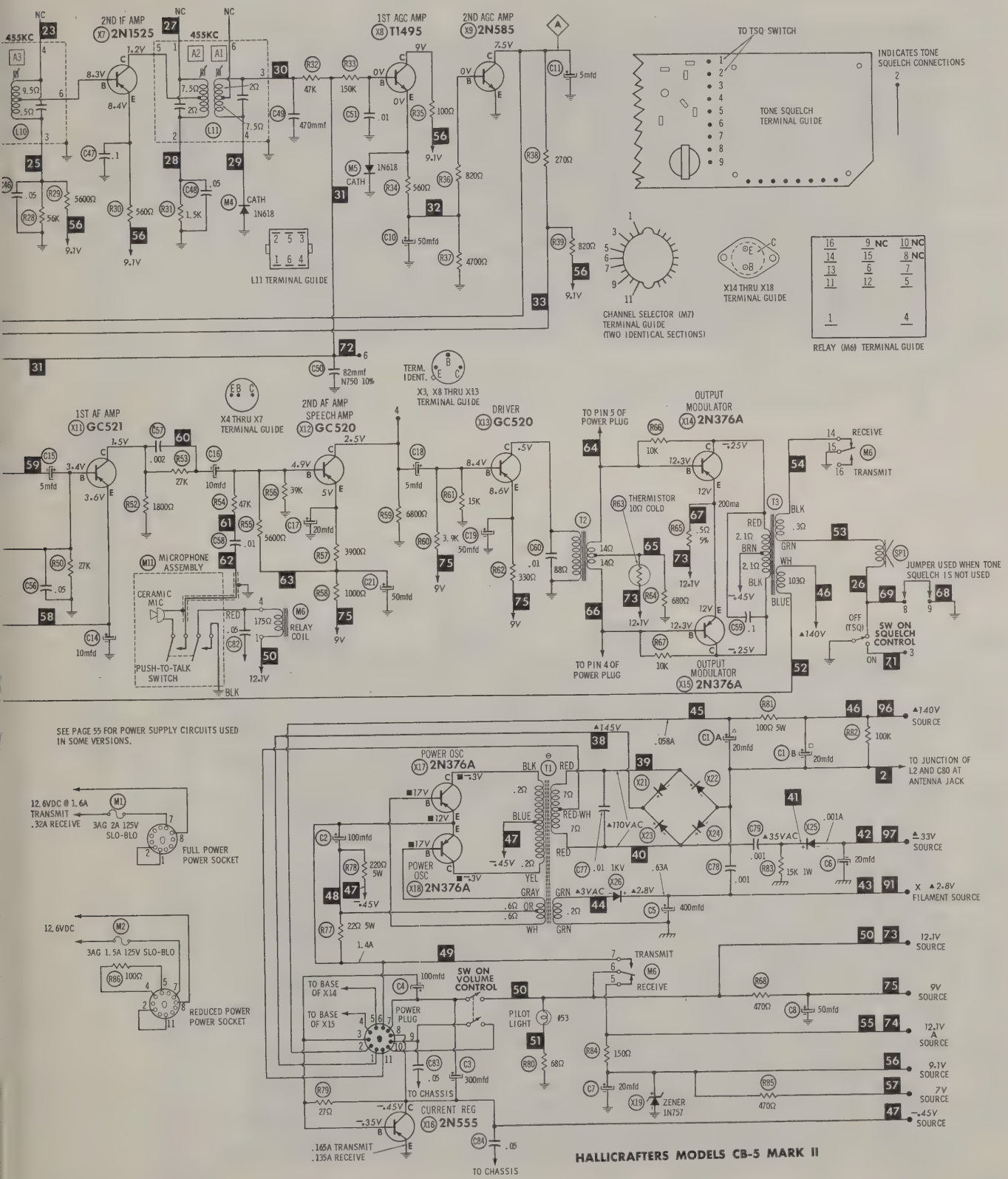
ALL VOLTAGE MEASUREMENTS ARE MADE IN RECEIVE POSITION, WITH RESPECT TO MAIN COMMON LINE, UNLESS OTHERWISE DESIGNATED.

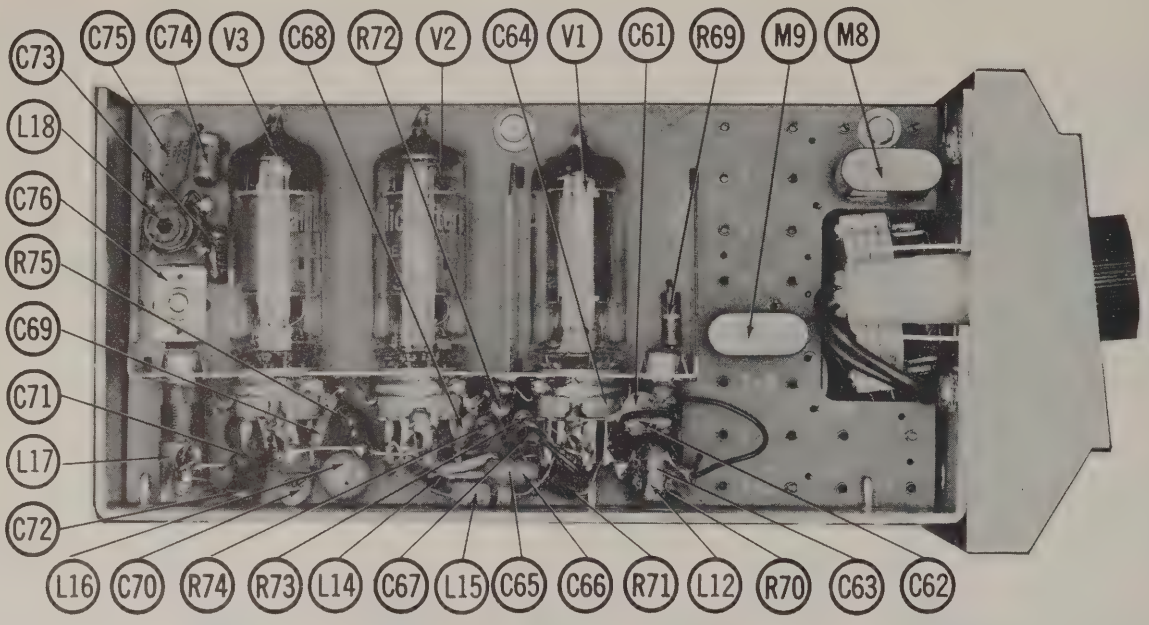
▲ MEASURED IN TRANSMIT POSITION WITH RESPECT TO TRANSMITTER COMMON LINE
■ MEASURED IN TRANSMIT POSITION WITH RESPECT TO MAIN COMMON LINE;
⊖ See parts list for alternate value or application.

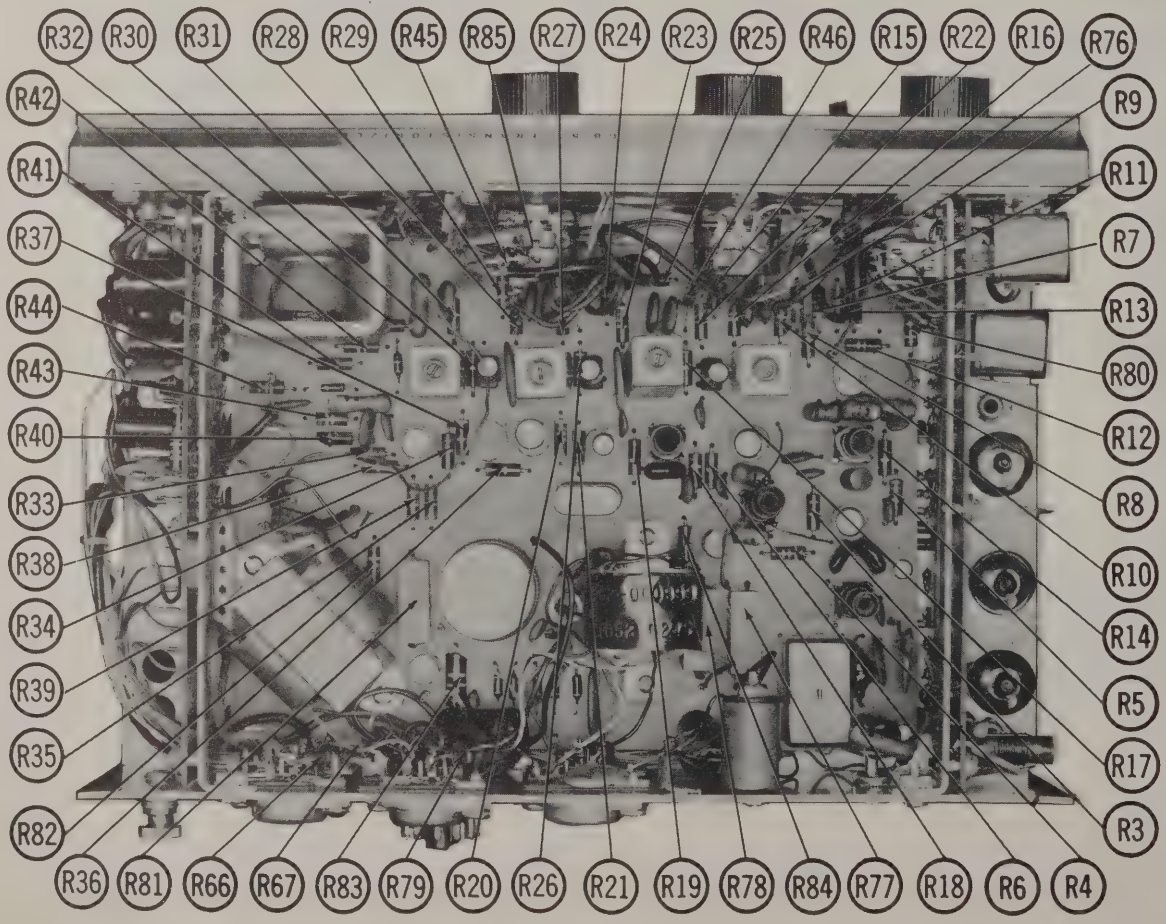
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE

©Howard W. Sams & Co., Inc, 1964


2ND IF AMP
X7 2N1525
1ST AGC AMP
X8 T1495
2ND AGC AMP
X9 2N585
455KC
TO TSQ SWITCH
INDICATES TONE SQUELCH CONNECTIONS
TONE SQUELCH TERMINAL GUIDE
L11 TERMINAL GUIDE
CHANNEL SELECTOR (M7) TERMINAL GUIDE (TWO IDENTICAL SECTIONS)
X14 THRU X18 TERMINAL GUIDE
RELAY (M6) TERMINAL GUIDE
1ST AF AMP
X11 GC521
2ND AF AMP SPEECH AMP
X12 GC520
DRIVER
X13 GC520
OUTPUT MODULATOR
X14 2N376A
X15 2N376A
X4 THRU X7 TERMINAL GUIDE
X3, X8 THRU X13 TERMINAL GUIDE
MICROPHONE ASSEMBLY
CERAMIC MIC
PUSH-TO-TALK SWITCH
RELAY COIL
THERMISTOR 10Ω COLD
TO PIN 5 OF POWER PLUG
TO PIN 4 OF POWER PLUG
JUMPER USED WHEN TONE SQUELCH IS NOT USED
SW ON SQUELCH CONTROL
RECEIVE
TRANSMIT
SEE PAGE 55 FOR POWER SUPPLY CIRCUITS USED IN SOME VERSIONS.
12.6VDC @ 1.6A TRANSMIT .32A RECEIVE
3AG 2A 125V SLO-BLO
FULL POWER POWER SOCKET
12.6VDC
3AG 1.5A 125V SLO-BLO
REDUCED POWER POWER SOCKET
POWER OSC
X17 2N376A
POWER OSC
X18 2N376A
CURRENT REG
X16 2N555
SW ON VOLUME CONTROL
TO BASE OF X14
TO BASE OF X15
POWER PLUG
PILOT LIGHT
TO CHASSIS
.165A TRANSMIT
.135A RECEIVE
TO JUNCTION OF L2 AND C80 AT ANTENNA JACK
140V SOURCE
33V SOURCE
2.8V FILAMENT SOURCE
12.1V SOURCE
9V SOURCE
12.1V A SOURCE
9.1V SOURCE
7V SOURCE
-45V SOURCE
ZENER 1N757
HALLICRAFTERS MODELS CB-5 MARK II


C75
C74
V3
C68
R72
V2
C64
V1
C61
R69
M9
M8
C73
L18
C76
R75
C69
C71
L17
C72
L16
C70
R74
R73
L14
C67
L15
C65
C66
R71
L12
R70
C63
C62


R32
R30
R31
R28
R29
R45
R85
R27
R24
R23
R25
R46
R15
R22
R16
R76
R42
R41
R37
R44
R43
R40
R33
R38
R34
R39
R35
R82
R9
R11
R7
R13
R80
R12
R8
R10
R14
R5
R17
R3
R36
R81
R66
R67
R83
R79
R20
R26
R21
R19
R78
R84
R77
R18
R6
R4

PARTS LIST AND DESCRIPTION

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Transmit Osc.	3A4	V3	Transmit Final	3B4
V2	Transmit Final	3B4			

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2N1865	RF Amp.	DS-25			PNP
X2	2N1865	1st Mixer	DS-25			PNP
X3	2N741	1st Rec. Osc.	DS-25			PNP
X4	2N1527	2nd Mixer	DS-25			PNP
X5	2N1527	2nd Rec. Osc.	DS-25			PNP
X6	2N1525	1st IF Amp.	DS-25			PNP
X7	2N1525	2nd IF Amp.	DS-25			PNP
X8	TI-495	1st AGC Amp.	DS-44	GE-5		NPN
X9	2N585	2nd AGC Amp.	DS-44	GE-5		NPN
X10	GC521	Squelch Amp.	DS-26			PNP
X11	GC521	1st AF Amp.	DS-26			PNP
X12	GC520	2nd AF Amp. -Speech Amp.	DS-26			PNP
X13	GC520	Driver	DS-26			PNP
X14	2N376A	Output - Modulator	DS-520	GE-3	2N301	PNP Note 1
X15	2N376A	Output - Modulator	DS-520	GE-3	2N301	PNP Note 1
X16	2N555	Current Regulator	DS-520	GE-3	2N301	PNP Note 1
X17	2N376A	Power Osc.	DS-520	GE-3	2N301	PNP Note 1
X18	2N376A	Power Osc.	DS-520	GE-3	2N301	PNP Note 1

Note 1. When replacing, apply silicone grease to both sides of insulator.

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X19	.003A	019-003107 (Zener 1N757)	1N3019A or ZA9.1		.4T9.1A
X20	.008A	019-003004 (Zener 1N748)			
X21	.058A	019-002935	A300 or D300①	1N1763 or 1N2861 or 1N3194	F2 or 20H
X22	.058A	019-002935	A300 or D300 ①	1N1763 or 1N2861 or 1N3194	F2 or 20H
X23	.058A	019-002935	A300 or D300 ①	1N1763 or 1N2861 or 1N3194	F2 or 20H
X24	.058A	019-002935	A300 or D300 ①	1N1763 or 1N2861 or 1N3194	F2 or 20H
X25	.001A	019-002935	1N537 or A100 or D100	1N2859	20H or F2
X26	.63A	027-000312	A5 or D50	1N2858	F1 or 10H

① Part #FW300 may replace X21 thru X24.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Hallicrafters PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲20	250	045-000889	PWH3-168-90	BB0300	XC2-13	TMD-2235	FP217A	PCLS-2515.1*
B	■20	250							
C2	100	20	045-000899	CRE623A	NLW100-25	MT1-20	MLV100-25	TT25X100	TE-1211
C3	300	20	045-001120	PRS1540	BR250-25		BL2350		TVAS-1208.5*
C4	100	20	045-000899	CRE623A	NLW100-25	MT1-20	MLV100-25	TT25X100	TE-1211
C5	400	3	045-000898	CRE239A	NLW400-3	MT1-26	BL2011	TT3X400	TE-1067
C6	20	15	045-000886	BCD15020	NLP20-15	MT1-10	BL1440	PET1570	VL-1169
C7	20	15	045-000886	BCD15020	NLP20-15	MT1-10	BL1440	PET1570	VL-1169
C8	50	15	045-000888	BCD15050	NLP50-15	MT1-16	MLV50-15	PET1575	VL-1174
C9	5	15	045-000887	BCD15005	NLP5-15	MT1-3	MLV5-15	PET1535	VL-1164
C10	50	15	045-000888	BCD15050	NLP50-15	MT1-16	MLV50-15	PET1575	VL-1174
C11	5	15	045-000887	BCD15005	NLP5-15	MT1-3	MLV5-15	PET1535	VL-1164

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Hallicrafters PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C12	150	6	045-000917	BCD6150	ECSP150-10	MT1-21	MLV150-6	TT6X150	VL-1104
C13	20	15	045-000886	BCD15020	NLP20-15	MT1-10	BL1440	PET1570	VL-1169
C14	10	20	045-000916	BCD25010	NLP10-25	MT1-5	MLV10-25	PET1760	VL-1207
C15	5	15	045-000887	BCD15005	NLP5-15	MT1-3	MLV5-15	PET1535	VL-1164
C16	10	20	045-000916	BCD25010	MLP10-25	MT1-5	MLV10-25	PET1760	VL-1207
C17	20	15	045-000886	BCD15020	NLP20-15	MT1-10	BL1440	PET1570	VL-1169
C18	5	15	045-000887	BCD15005	NLP5-15	MT1-3	MLV5-15	PET1535	VL-1164
C19	50	15	045-000888	BCD15050	NLP50-15	MT1-16	MLV50-15	PET1575	VL-1174
C20	5	10	045-000857	PTT37	NLW5-15	MT1-3	BL1130	TT12X5	TE-1127
C21	50	10	045-000945	PTT45	NLW50-10	MT1-16	BL1531	TT10X50	TE-1119

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C22	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C23	38 2%	#481-151380						
C24	220 2%							
C25	.1		TTD-1				TA010	TH-P10
C26	.005		TTD-005	CK-502	H1		TA250	TG-D50
C27	36 N750	#491-106360-94		TCN-36				
C28	.005		TTD-005	CK-502	H1		TA250	TG-D50
C29	36 N750	#491-106360-94		TCN-36				
C30	.005		TTD-005	CK-502	H1		TA250	TG-D50
C31	.05		TTD-05	CK-503	H5		TA150	TG-S50
C32	.05		TTD-05	CK-503	H5		TA150	TG-S50
C33	10 N750 5%			TCN-10	C10Q1U		CN7410	10TCU-Q10
C34	100 N750			TCN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C35	12 N750			TCN-12			CN7412	10TCU-Q12
C36	.005		TTD-005	CK-502	H1		TA250	TG-D50
C37	.05		TTD-05	CK-503	H5		TA150	TG-S50
C38	.005		TTD-005	CK-502	H1		TA250	TG-D50
C39	.01		TTD-01	CK-103	H2		TA110	TG-S10
C40	510 2%				CD10F511G	DM-15-511G		
C41	.005		TTD-005	CK-502	H1		TA250	TG-D50
C42	.05		TTD-05	CK-503	H5		TA150	TG-S50
C43	.05		TTD-05				TA150	TH-S50
C44	.1		TTD-1				TA010	TH-P10
C45	.05		TTD-05				TA150	TH-S50
C46	.05		TTD-05				TA150	TH-S50
C47	.1		TTD-1				TA010	TH-P10
C48	.05		TTD-05				TA150	TH-S50
C49	470		DI-470	DD-471	JB6T47	CCD-471	GP347	10TS-T47
C50	82 N750			TCN-82		CCTN-820	CN7482	10TCU-Q82
C51	.01		TTD-01	CK-103	H2		TA110	TG-S10
C52	.05		TTD-05				TA150	TH-S50
C53	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C54	.1		TTD-1				TA010	TH-P10
C55	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C56	.05		TTD-05				TA150	TH-S50
C57	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C58	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C59	.1		TTD-1				TA010	TH-P10
C60	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C61	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C62	10 2%	#481-131100					MCE215	
C63	47 2%	#481-151470			CD15E470G	DM-15-470G		
C64	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C65	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C66	47 N750			TCN-47	C10Q47U	CCTN-470	CN7447	10TCU-Q47
C67	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C68	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C69	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C70	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C71	470		DI-470	DD-471	JB6T47	CCD-471	GP347	10TS-T47
C72	14 5%							
C73	160 2%				CD15F161G	DM-15-161G		
C74	27 NPO			TCZ-27	C10Q25C	CCTO-270	CNO427	10TCC-Q27

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C75	.01	#044-100511	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C76	.9-7							
C77	.01 1KV		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C78	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C79	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C80	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C81	56 N750			TCN-56		CCTN-560	CN7456	10TCU-Q56
C82	.05		TTD-05				TA150	TH-S50
C83	.05		TTD-05				TA150	TH-S50
C84	.05		TTD-05				TA150	TH-S50

Hallicrafters Part Number.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			Hallicrafters PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Power Sw.	250K	025-002126	F2-250K, SU204, KR-3 or (B-51, KR-3)	A47-250K-Z, FS-3, SWE-21	Q13-130, 76-4, or (BU1, CF23, SS1, VF)*	UA254A, SL3500, US43 or (RU254A, SL38, SL3500, US43) or (U44, US28)
R2	Squelch & Tone Squelch Switch	100K	025-002127	F1-100K, SU204, KR-3 or (B-40, KR-3)	A47-100K-S, FS-3, SWE-21	Q11-128, 76-4, or (BU1, CF13, SS1, VF)*	UA15L, SL3500, US43, or (RU15L, SL38, SL3500, US43) or (U41, US28)

* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R63	10Ω Cold Thermistor		FT10	#023-000495	R78	220Ω 5W	MR3	5W-SQ-220	#445-012221
R77	22Ω 5W	MR2	5W-SQ-22.5	#445-012220	R81	100Ω 5W	PW5-100	5W-SQ-100	#445-012101

Hallicrafters Part Number.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Hallicrafters PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Antenna (7 turns)	051-003508					
L2	RF Choke (710uh)	053-000530	TV-206	6148	RTC-8583	T327	
L3	RF Choke (710uh)	053-000530	TV-206	6148	RTC-8583	T327	
L4	Rec. Input	051-003505					
L5	Rec. RF	051-003503					
L6	1st Rec. Osc.	051-003504					
L7	1650KC IF	050-000880					
L8	2nd Rec. Osc.	051-003506					
L9	1st 455KC IF	050-000878					
L10	2nd 455KC IF	050-000878					
L11	3rd 455KC IF	050-000879					
L12	Trans. Osc.	051-003502					
L13	RF Choke (1.8uh)	053-000669					
L14	RF Choke (710uh)	053-000530	TV-206	6148	RTC-8583	T327	
L15	Fil. Choke (4.7uh)	053-000663	SW-631	74F476AP	RTC-8518	T819	
L16	RF Choke (1MH)	053-000625					
L17	Final Tank	051-003507					
L18	54MC Trap	051-003501					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	Hallicrafters PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	12.6VDC @ 1.4A Input	110VCT @ .058A	3VAC @ .63A	052-000999 *					* Alternate Part # 052-001057

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Hallicrafters PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	2.2	1	055-000410					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	Hallicrafters PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	2000Ω CT	50K	055-000482					
		SEC. 2						
		3-4Ω						

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Hallicrafters PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	2 Amp. 125V S/B	039-100428	006-000883	313002.	155020	MDL 2	HHJ
M2	3AG	1.5Amp. 125V S/B			30301.5	155020	MPL 1 1/2	HHJ

MISCELLANEOUS

ITEM No.	PART NAME	Hallicrafters PART No.	NOTES
M3	Diode	019-002964	Noise Limiter (1N456)
M4	Diode	019-002952	Det. (1N618)
M5	Diode	019-002952	AGC Clamper (1N618)
M6	Relay	021-000664	Transmit-Receive
M7	Switch	060-002559	Channel Selector
M8	Crystal	019-002819	Receive (Specify Channel)
M9	Crystal	019-002820	Transmit (Specify Channel)
M10	Crystal	019-002936	2105KC (2nd Rec. Osc.)
M11	Microphone Ass'y.	081-000113	Includes Push-to-talk Switch
M12	Modulation Indicator	086-000632	Neon Bulb

PART NAME	Hallicrafters PART No.
DC Power Cable	087-007913
Audio Printed Board	150-005335
Rec. Printed Board	150-005337
Trans. Printed Board	150-005333

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Dial - Channel Selector	150-005455
Knob - Channel Selector	015-001571
Knob - Volume, Squelch	015-001590

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA	
		Hallicrafters PART No.	QUAM PART No.
SP1	3" PM 3-4Ω	085-000224	30A05

WIRING DATA

General-use Hook-up Wire .... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors

Shielded Antenna Lead ..... Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)

Coiled Microphone Cable ..... Use BELDEN No. 8497 3 Conductor - 1 Shielded for Press-to-Talk (Neoprene)
8496 3 Conductor - 1 Shielded for Press-to-Talk (Vinyl)

Ignition Noise Suppression .... Use BELDEN No. 7300-Series Spark-Plug Sets

Bonding Strap ..... Use BELDEN No. 8661 (3/8 In.)

TRADE NAME: Heath Models GW-32A, GWW-32A, GW-32D, GWW-32D

SUPPLIER: For Current Address, see Master Index

TYPE SET: 10 Tube Transceiver with Selective Call

POWER SUPPLY: 110 — 120 Volts AC, 60 Cycles (or)
6 (or) 12 Volt Storage Battery

RATING: 50 Watts, .52 Amp. @ 117VAC (Receive)
60 Watts, .60 Amp. @ 117VAC (Transmit)
4 Amp. @ 12.6VDC (Receive)
5 Amp. @ 12.6VDC (Transmit)

TUNING RANGE: Any 5 CB Channels 1 thru 23

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:
A1 thru A11..... GENERAL CEMENT #8282, 8606, 8606-L
WALSCO #2526, 2543, 2544

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage, to point Ⓐ.
Calibrate signal generator necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 of V2. (Mixer Grid), low side to chassis (455KC Unmod.)	Any	A1, A2, A3, A4	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis. (27.085MC unmod.)	11 (27.085MC)	A5	Adjust clockwise to minimum indication then adjust counter-clockwise until an abrupt increase is noted. Turn slug 1 turn further counterclockwise.
"	"	A6, A7, A8	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

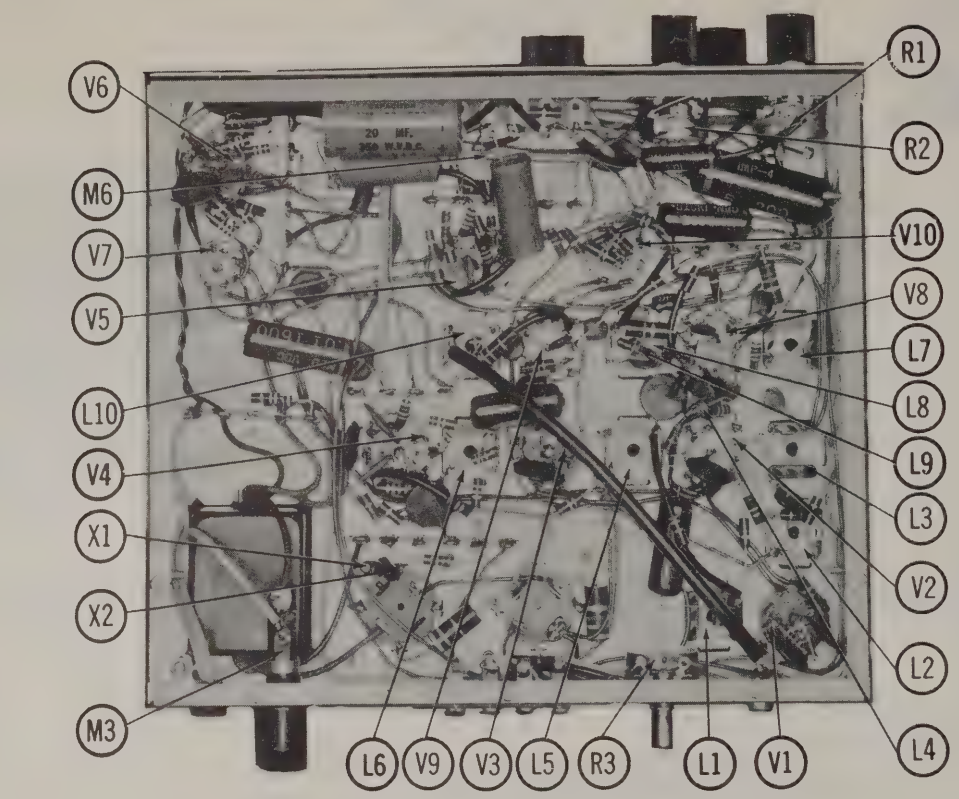
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

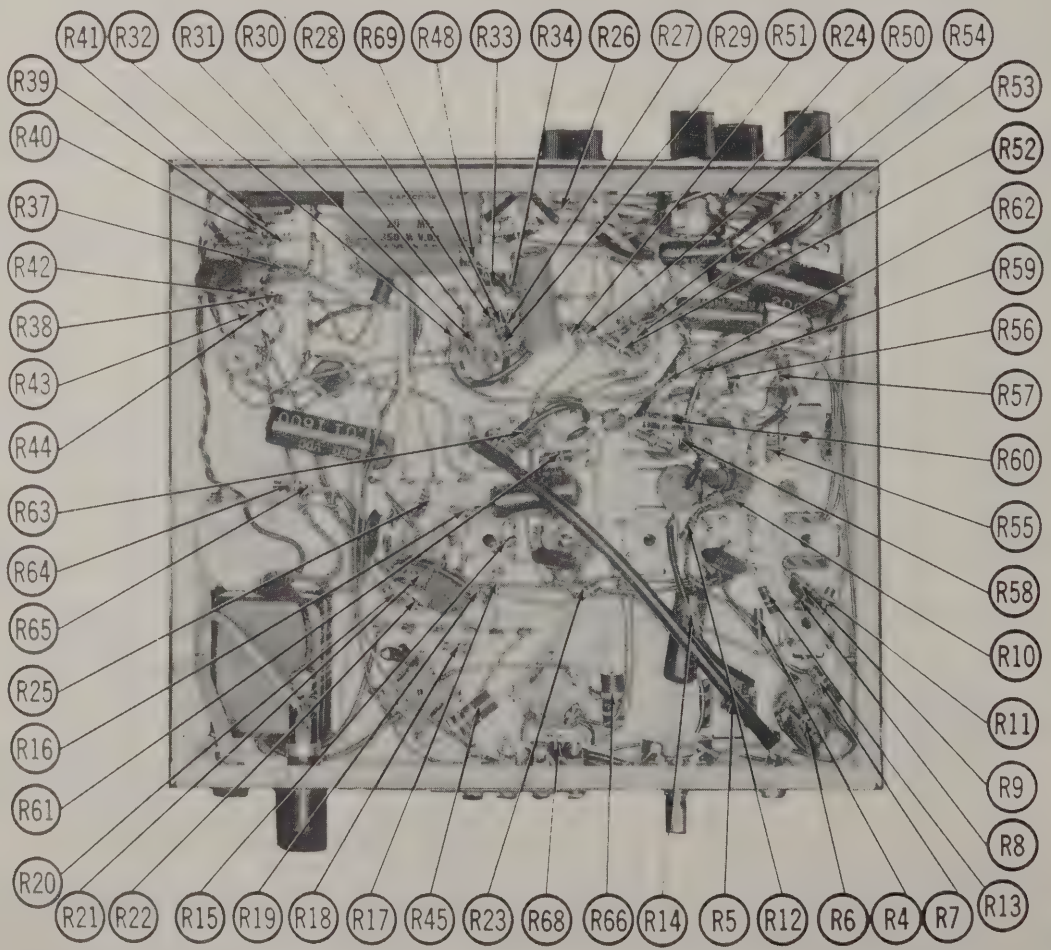
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

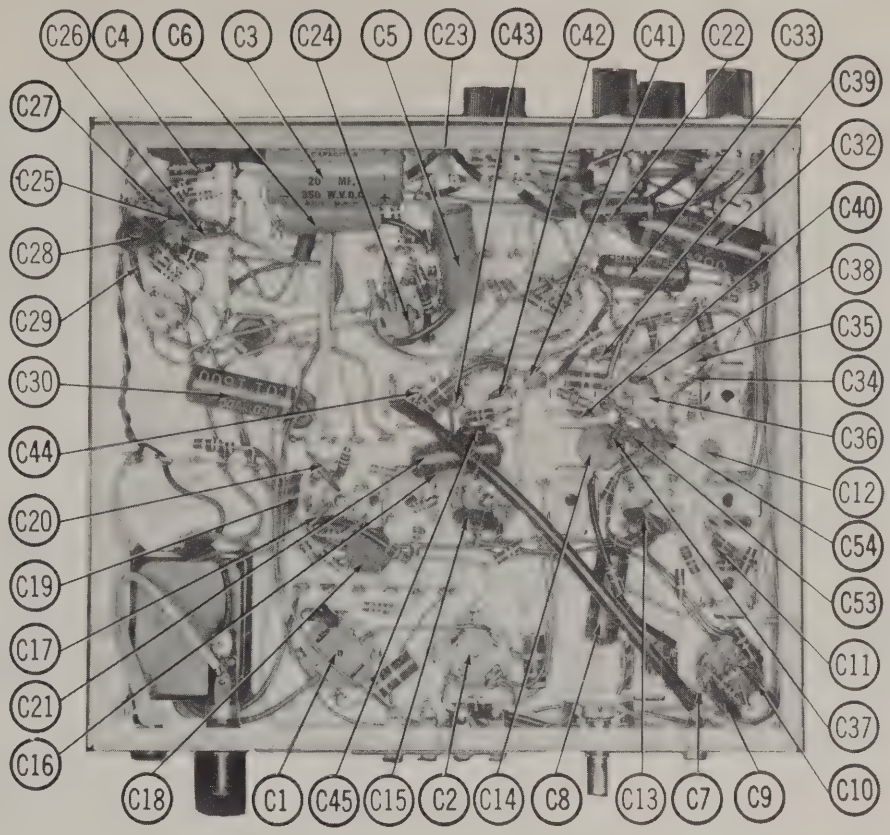
Connect either 50Ω dummy load or the normally used antenna system. Set channel selector to highest usable channel.

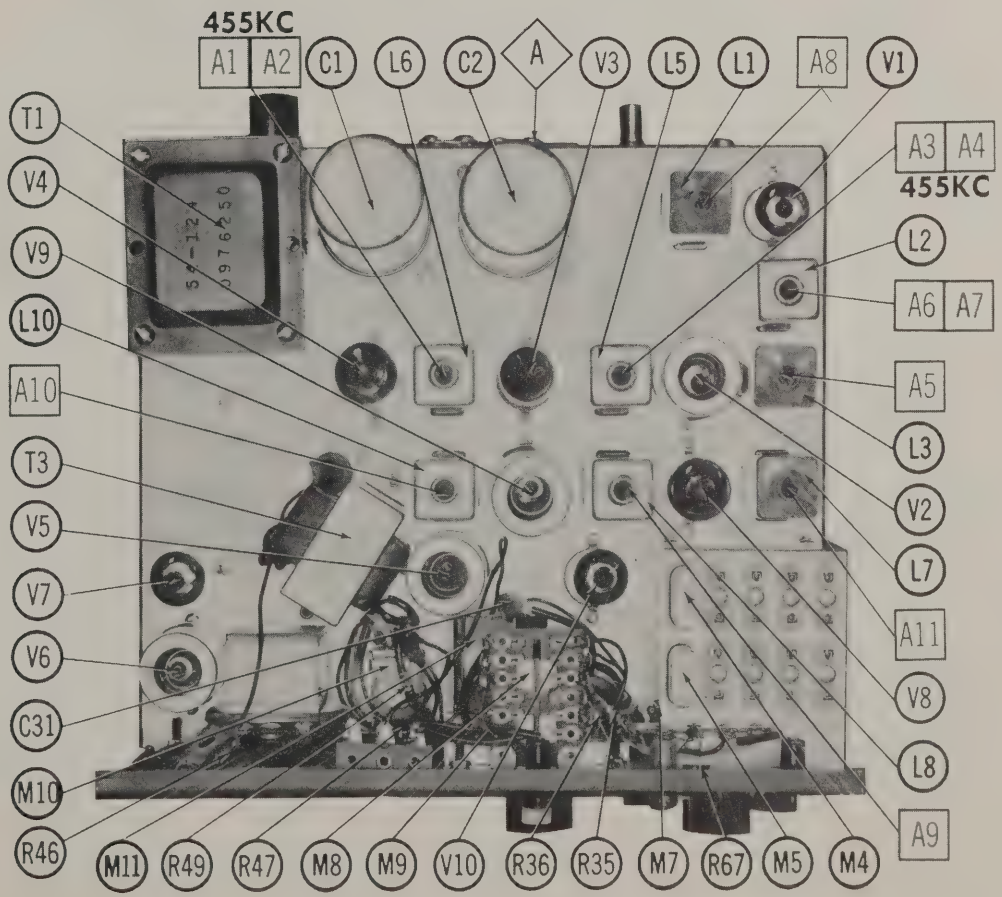
INDICATOR	ADJUST	REMARKS
Fielf Strength Meter	A9, A10	Key transmitter. Adjust for maximum indication.
"	A11	Key Transmitter. Adjust clockwise to minimum indication then counterclockwise until an abrupt increase is noted. Turn slug 1/4 turn further counterclockwise. Key transmitter a few times to be sure oscillator starts each time. If not, turn slug further counterclockwise until satisfactory operation is obtained. If widely separated channels are to be used, A9 and A10 should be adjusted to some compromise frequency. However A11 should be adjusted to the highest channel used.

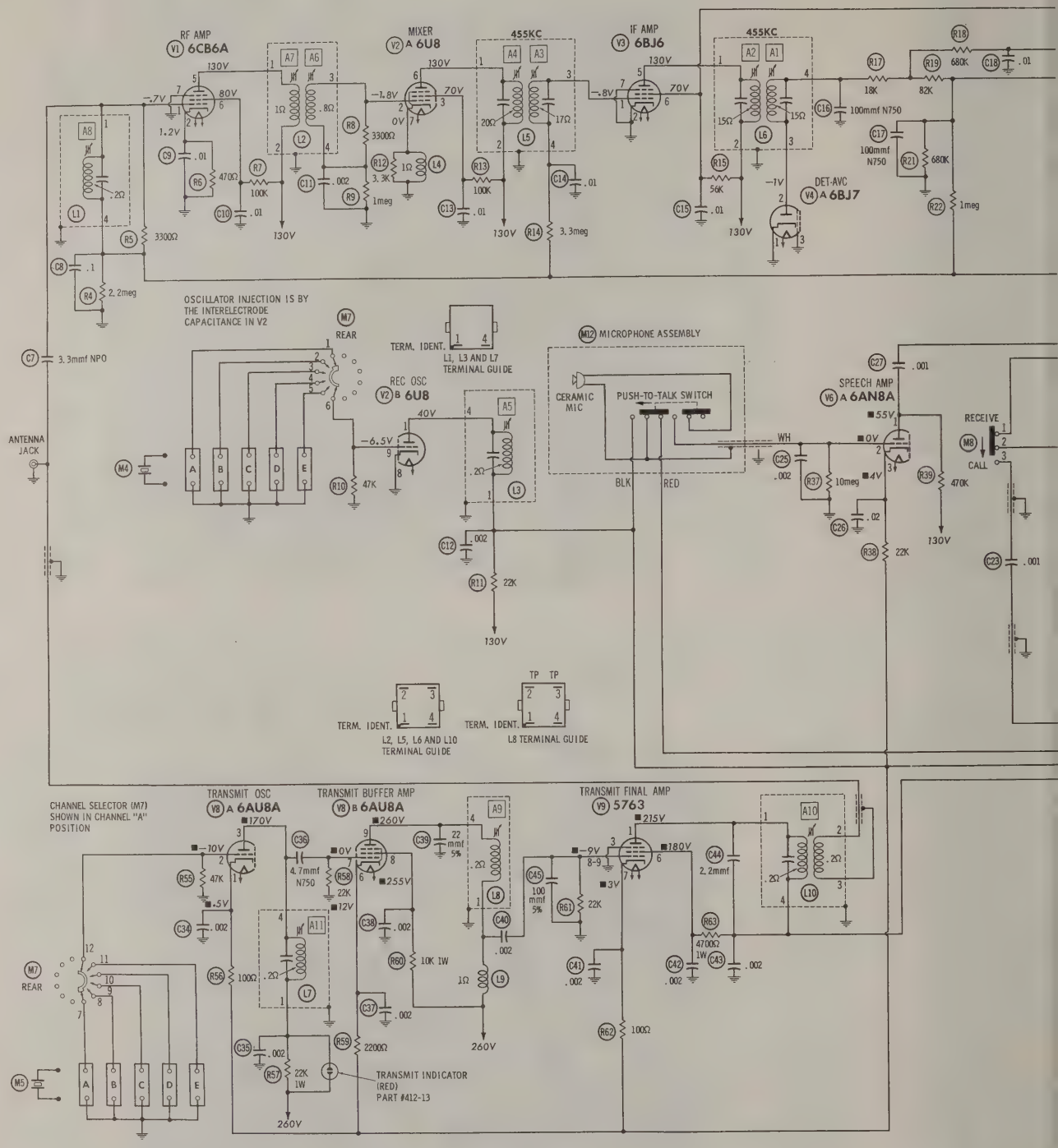
© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY522


V6
M6
V7
V5
L10
V4
X1
X2
M3
L6
V9
V3
L5
R3
L1
V1
L4
L2
V2
L3
L9
L8
L7
V8
V10
R2
R1


R41
R32
R31
R30
R28
R69
R48
R33
R34
R26
R27
R29
R51
R24
R50
R54
R53
R52
R62
R59
R56
R57
R60
R55
R58
R10
R11
R9
R8
R13
R7
R4
R6
R12
R5
R14
R66
R68
R23
R45
R17
R18
R19
R15
R22
R21
R20
R61
R16
R25
R65
R64
R63
R44
R43
R38
R42
R37
R40
R39

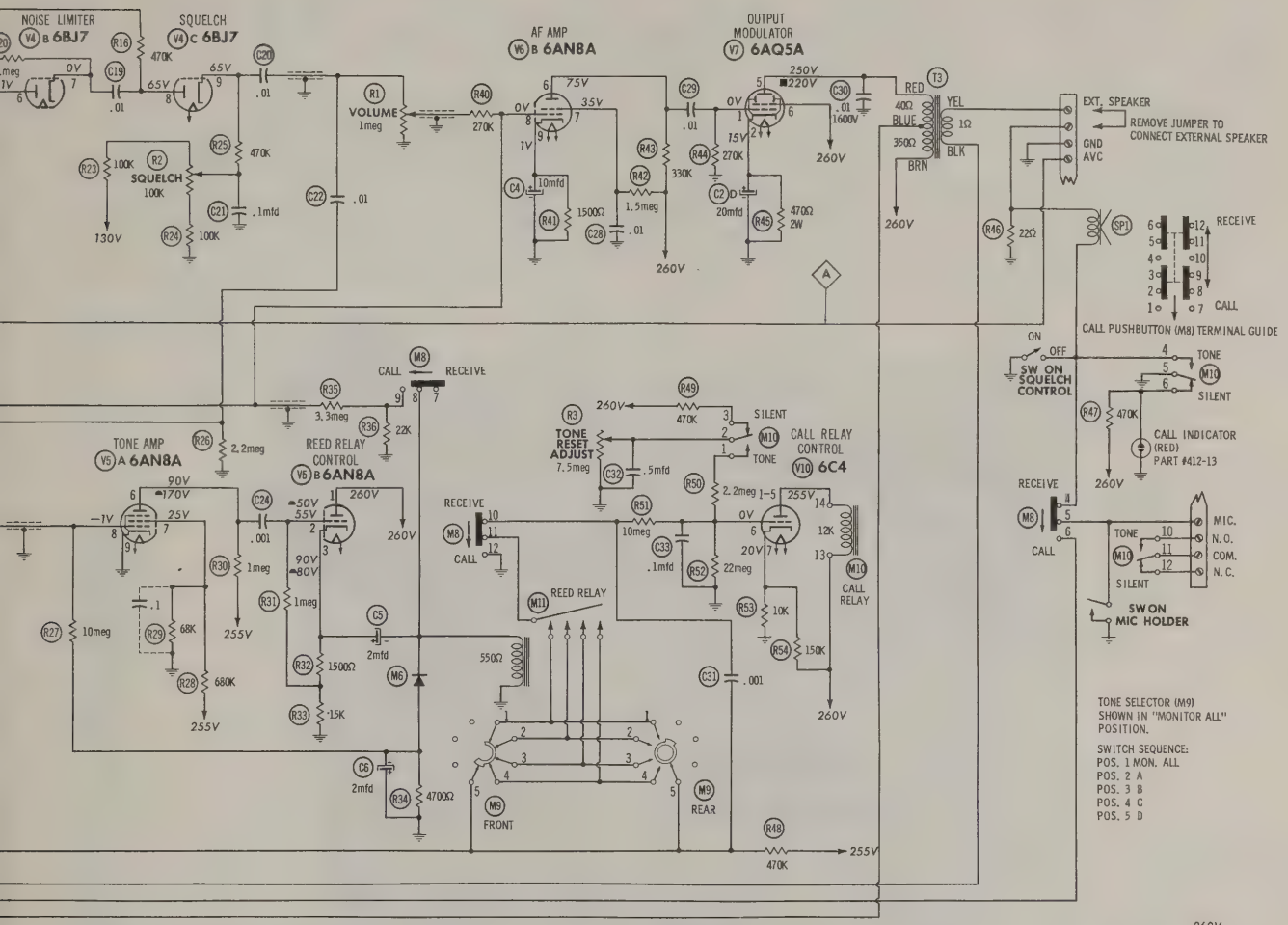

C26
C4
C6
C3
C24
C5
C23
C43
C42
C41
C22
C33
C27
C25
C28
C29
C30
C44
C20
C19
C17
C21
C16
C18
C1
C45
C15
C2
C14
C8
C13
C7
C9
C10
C37
C11
C53
C54
C12
C36
C34
C35
C38
C40
C32
C39


455KC
A1
A2
C1
L6
C2
A
V3
L5
L1
A8
V1
T1
V4
V9
L10
A10
T3
V5
V7
V6
C31
M10
R46
M11
R49
R47
M8
M9
V10
R36
R35
M7
R67
M5
M4
A9
V8
L8
A11
V2
L7
L3
A5
A6
A7
L2
A3
A4
455KC

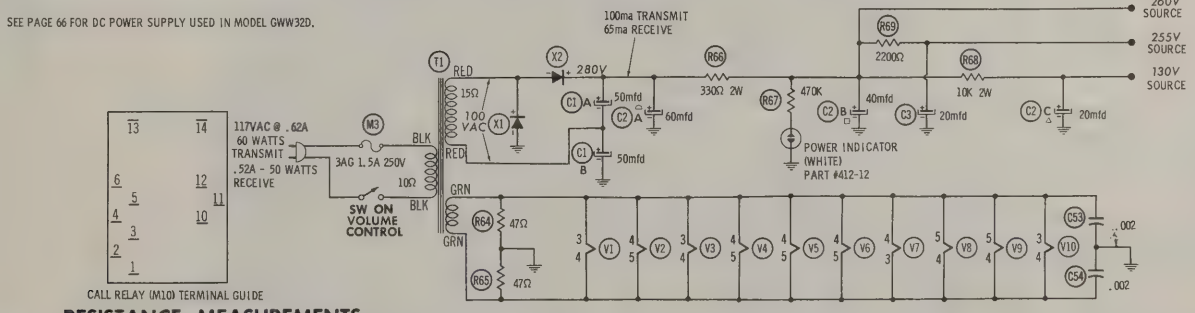


1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964



SEE PAGE 66 FOR DC POWER SUPPLY USED IN MODEL GWW32D.



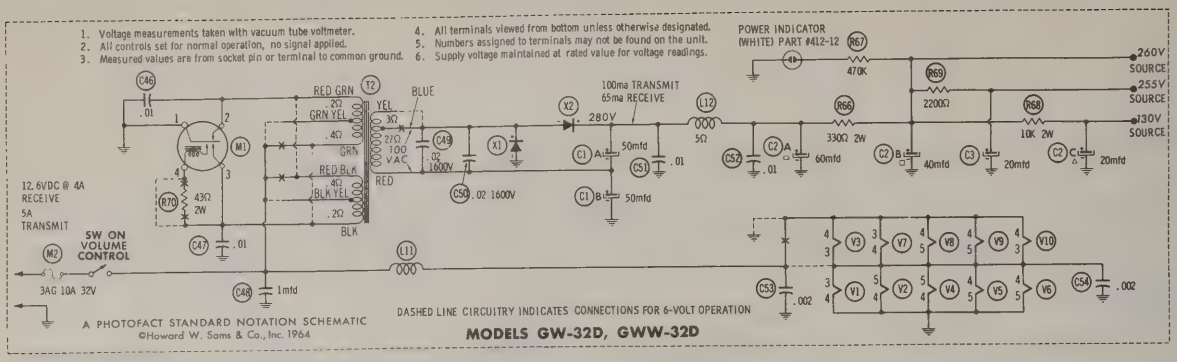
CALL RELAY (M10) TERMINAL GUIDE

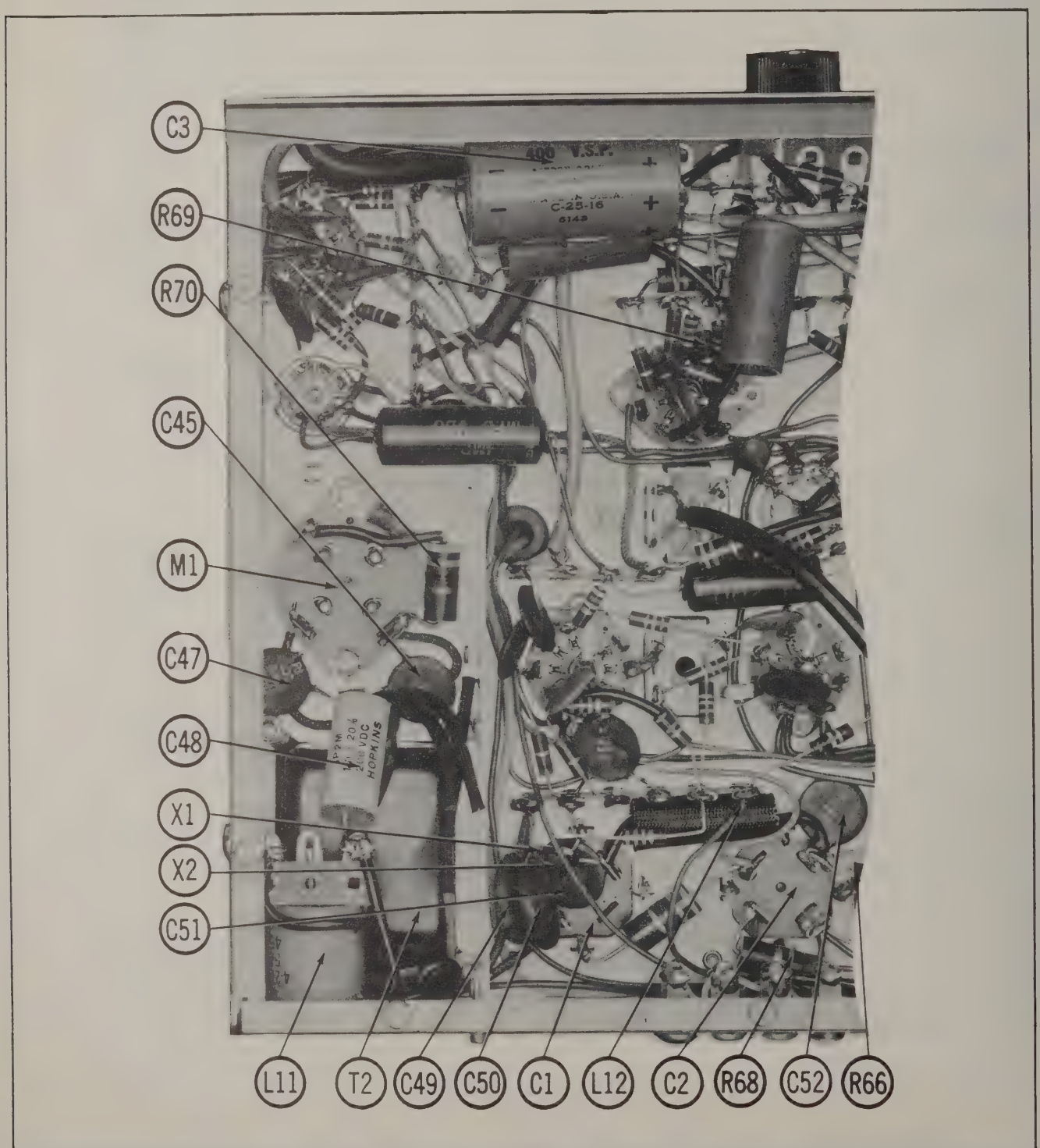
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CB6A	1meg	470Ω	FIL	FIL	†10K	†110K	0Ω		
V2	6U8	†34K	1meg	†110K	FIL	FIL	†10K	1Ω	0Ω	47K
V3	6BJ6	4.5meg	0Ω	FIL	FIL	†10K	†66K	0Ω		
V4	6BJ7	0Ω	700K	0Ω	FIL	FIL	600K	2.5meg	†535K	870K
V5	6AN8A	†330Ω	1meg	16K	FIL	FIL	†1meg	†100K	1.8meg ▲10meg	0Ω
V6	6AN8A	†480K	10meg	■ 22K	FIL	FIL	†330K	†1.5meg	280K	1500Ω
V7	6AQ5A	270K	470Ω	FIL	FIL	FIL	†720Ω	†330Ω	NC	
V8	6AU8A	■ 100Ω	47K	†22K	FIL	FIL	■ 2200Ω	22K	†10K	†330Ω
V9	5763	†680Ω	NC	0Ω	FIL	FIL	†5400Ω	■ 100Ω	22K	22K
V10	6C4	12K	NC	FIL	FIL	NC	22K ▲ 2meg	10K		
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
■ MEASURED IN TRANSMIT POSITION NC NO CONNECTION
▲ MEASURED IN TRANSMIT-CALL POSITION
† MEASURED FROM OUTPUT OF X2

HEATH MODELS GW-32A, GWW-32A


1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
POWER INDICATOR (WHITE) PART #412-12
260V SOURCE
255V SOURCE
130V SOURCE
470K
2200Ω
330Ω 2W
10K 2W
60mfd
40mfd
20mfd
20mfd
100ma TRANSMIT
65ma RECEIVE
280V
50mfd
50mfd
.01
.02 1600V
.02 1600V
.002
.002
1mfd
.01
12.6VDC @ 4A RECEIVE
5A TRANSMIT
43Ω 2W
SW ON VOLUME CONTROL
3AG 10A 32V
RED GRN
GRN YEL
GRN
RED BLK
BLK YEL
BLK
YEL
BLUE
RED
BLK
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964
DASHED LINE CIRCUITRY INDICATES CONNECTIONS FOR 6-VOLT OPERATION
MODELS GW-32D, GWW-32D


C3
R69
R70
C45
M1
C47
C48
X1
X2
C51
L11
T2
C49
C50
C1
L12
C2
R68
C52
R66
400 V.S.P.
C-25-16
6143
HOPKINS

PARTS LIST AND DESCRIPTION

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.	6CB6A	V6	Speech Amp. -AF Amp.	6AN8A
V2	Mixer-Rec. Osc.	6U8	V7	Output - Modulator	6AQ5A
V3	IF Amp.	6BJ6	V8	Transmit Osc. -Buffer	6AU8A
V4	Det. -AVC-Noise Limiter-Squelch	6BJ7	V9	Final	5763
			V10	Call Relay Control	6C4
V5	Tone Amp. -Reed Relay Control	6AN8A			

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.100A	57-27	VB400 (or A300*)	1N3194 or 1N3254	F4 or 40H
X2	.100A	57-27		1N3194 or 1N3254	F4 or 40H

* 2 Units Required

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	HEATH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲50	200	25-58						
B	▲50	200							
C2A	▲60	450							
B	■40	350	25-93	AFH4-93-50	C0365			FP450.16	TVLS-4708.10 *
C	▲20	350			BR20-250				
D	20	250							
C3	20	350	25-16	PRS1650	BR20-350	QT1-9	TD-20-350	TC65	TVA-1608
C4	10	10	25-54	PTT39	NLW10-15	MT1-5	MLV10-10	TT12X10	TE-1114
C5	2	150	25-39	CRE951A	NLW2-150	QT1-1	MLV2-150	TT150X2	TE-1501
C6	2	150	25-39	CRE951A	NLW2-150	QT1-1	MLV2-150	TT150X2	TE-1501

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	3.3 NPO		NPO-DI 3.3	DTZ-3R3	C10V33C	CCTO-3R3	CNO-533	10TCC-V33
C8	.1 200V		P288N-1	DF-104	WMF2P1	2CP-4-104	GEM-201	2TM-P10
C9	.01		BPD-001	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C10	.01		BPD-001	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C11	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C12	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C13	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C14	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C15	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C16	100 N750		N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C17	100 N750		N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C18	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C19	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C20	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C21	.1 200V		P288N-1	DF-104	WMF2P1	2CP-4-104	GEM201	2TM-P10
C22	.01 400V		P488N-01	DD-103	WMF4S1	4CP-1-103	GEM411	4TM-S10
C23	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C24	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C25	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C26	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C27	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C29	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C30	.01 1600V		VBC-27	DD16-103	PKM16S1	16CP-4-103	GEM1611	MB-S1
C31	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C32	.5 200V		P288N-5		WMF2P47	2CP-6-504	GEM205	2TM-P50
C33	.1 200V		P288N-1	DF-104	WMF2P1	2CP-4-104	GEM201	2TM-P10
C34	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C35	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C36	4.7 N750			TCN-5	C10V5U	CCTN-050	CN7547	10TCU-V50
C37	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C38	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C39	22 5%		ADM-15-220	CPR-22J	CD15E220J	DM-10-220J		MS-422
C40	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C41	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C42	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C43	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C44	2.2			TCZ-2R2	C10V22C	CCTO-2R2	CNO522	10TCC-V22
C45	100 5%		ADM-15-101	CPR-100J	CD15F101K	DM-10-101J	MCE235	MS-31
C46	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C47	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C48	1mfd 200V	Note 1	V2161-1.0		PM2W1		GEM21	2TM-M1
C49	.02 1600V	Note 1					UAC120	
C50	.02 1600V	Note 1					UAC120	
C51	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C52	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C53	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C54	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20

Note 1. Models GW-32D, GWW-32D only.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			HEATH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Power Sw.	1meg	19-26	F2-1meg, SU204, KR-1 or (B-70-S)	A47-1meg-Z, RS-2, SWE-12	B13-137, SK3, 76-1 or (BU2, CF26, SS3, GC)*	UA16A, SL2500, US41 or (RU16A, SL38, SL2500, US41) or (U53, US26)
R2	Squelch & Tone Squelch Switch	100K	19-11	F1-100K, SU204, KR1 or (B-40, KR1)	A47-100KS, RS-2, SWE-12	B11-128, SK3, 76-1 or (BU2, CF13, SS3, GC)*	UA15L, SL2500, US41 or (RU15L, SL38, SL2500, US41) or (U41, US26)
R3	Tone Reset	7.5meg	10-45	F1-7.5meg-S, SU204 or (B-90)	A47-7.5meg-S, RS-2	B11-142, SK3 or (BU2, CF69, SS3, DC1)*	UA755L, SL2500, or (U82)

* "SNAPTROL"

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		HEATH PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Antenna	40-312					
L2	RF	40-442					
L3	Receive Osc.	40-312					
L4	RF Choke (30uh)	45-27	TV-180	72F335AP	RTC-8593	T972	
L5	1st IF	52-38	BC-352	14-C1	RTC-8632	T607	
L6	2nd IF	52-39	BC-352	14-C2	RTC-8633	T608	
L7	Transmit Osc.	40-312					
L8	Buffer	40-431					
L9	RF Choke (30uh)	45-27	TV-180	72F335AP	RTC-8593	T972	
L10	Final Plate	40-432					
L11	Hash Choke (10uh)	45-20 *					
L12	RF Choke (90uh)	45-7 *		6177	RTC-9171	T368	

* Models GW32D, GWW32D only.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .62A	100VAC @ .360A AC	6.3VAC @ 4A	54-124					
	PRI. 1	PRI. 2	SEC. 1						
T2	6.3VCT @ 3A	6.3VCT @ 3A	100VAC @ .360A AC	55-8					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	5K Tap @ 4300Ω	3-4Ω	51-94					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		HEATH PART No.	QUAM PART No.	
SP1	3 1/2" PM 3-4Ω	401-72	3A05	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				HEATH PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	6	115∿	68-5	5372	1610	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			HEATH PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	10A 32V	421-30	423-6	311010	155020	AGC10	HMJ
M3	3AG	1 1/2A 250V	421-1	423-1	31201.5	342012	AGC 1 1/2	HKP

MISCELLANEOUS

ITEM No.	PART NAME	HEATH PART No.	NOTES
M4	Crystal		Receive (Part Numbers are consecitive from 404-14 for channel 1 to 404-36 for channel 23)
M5	Crystal		Transmit (Part numbers are consecitive from 404-44 for channel 1 to 404-66 for channel 23)
M6	Diode	56-4	Tone AGC
M7	Switch	63-94	Channel Selector (2-Pole, 5-Position Rotary)
M8	Switch	64-20	Receive-Call (Spring-Loaded Slide)
M9	Switch		Tone Selector (2-Pole, 5-Position Rotary)
M10	Relay	69-14	Call (3PDT)
M11	Reed Relay	69-27	Tone Generator (Specify Part Number and Tone Group Letter on Unit when ordering)
M12	Microphone Ass'y.	480-29	Includes Push-to-talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Push Button - Call (White)	462-M132
Knob - Channel, Tone	462-139
Knob - Volume, Squelch	462-159

ITEM	PART No.
Knob - Pointer	463-27
Front Panel	203-M331F835
Front Panel Trim Plate	205-M394F847
Cabinet	90-M250F

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors
		8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type)
		8237 Low Loss (RG-8/U)
		8240 (Solid) Miniature (RG-58/U)
		8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene)
		8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)

TRADE NAME: Heath Models GW-42, GWW-42

SUPPLIER: For Current Address, See Master Index

TYPE SET: 12 Transistor Transceiver with Selective Call

POWER SUPPLY: 110 — 120 Volts AC, 60 Cycles (or)
6 (or) 12 Volt Storage Battery

RATING: 51 Watts, .7 Amp. @ 117VAC (Receive)
70 Watts, .8 Amp. @ 117VAC (Transmit)
4.5 Amp. @ 12.6VDC (Receive)
5.4 Amp. @ 12.6VDC (Transmit)

TUNING RANGE: Any 5 CB Channels 1 thru 23
Receiver may be continuously tuned

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:
A1 thru A15.....GENERAL CEMENT #8282, 8606, 8606-L
WALSCO #2526, 2543, 2544

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage, to point (A).
Calibrate signal generator to required channels by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 (grid) of V2 (Mixer), low side to chassis. (455KC Unmod.).	Any	A1, A2, A3, A4, A5, A6	Adjust for maximum indication.
High side thru .1mfd to antenna jack. Low side to chassis. Tune to channel frequency (Unmod.)	11 (27.085MC)	A7	Adjust clockwise to MINIMUM indication then counterclockwise until an abrupt increase is noted. Turn slug 1/4 turn further counterclockwise.
"	1 (26.965MC)	A8	Set channel selector to any variable tuning position. Set dial pointer to channel 1. Adjust slug clockwise until snug, then counterclockwise to the first maximum indication.
"	23 (27.255MC)	A9	Set channel selector to any variable tuning position. Set dial pointer to channel 23. Adjust for maximum indication.
"	11 (27.085MC)	A10, A11, A12	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPART D, SECTION 95.95).

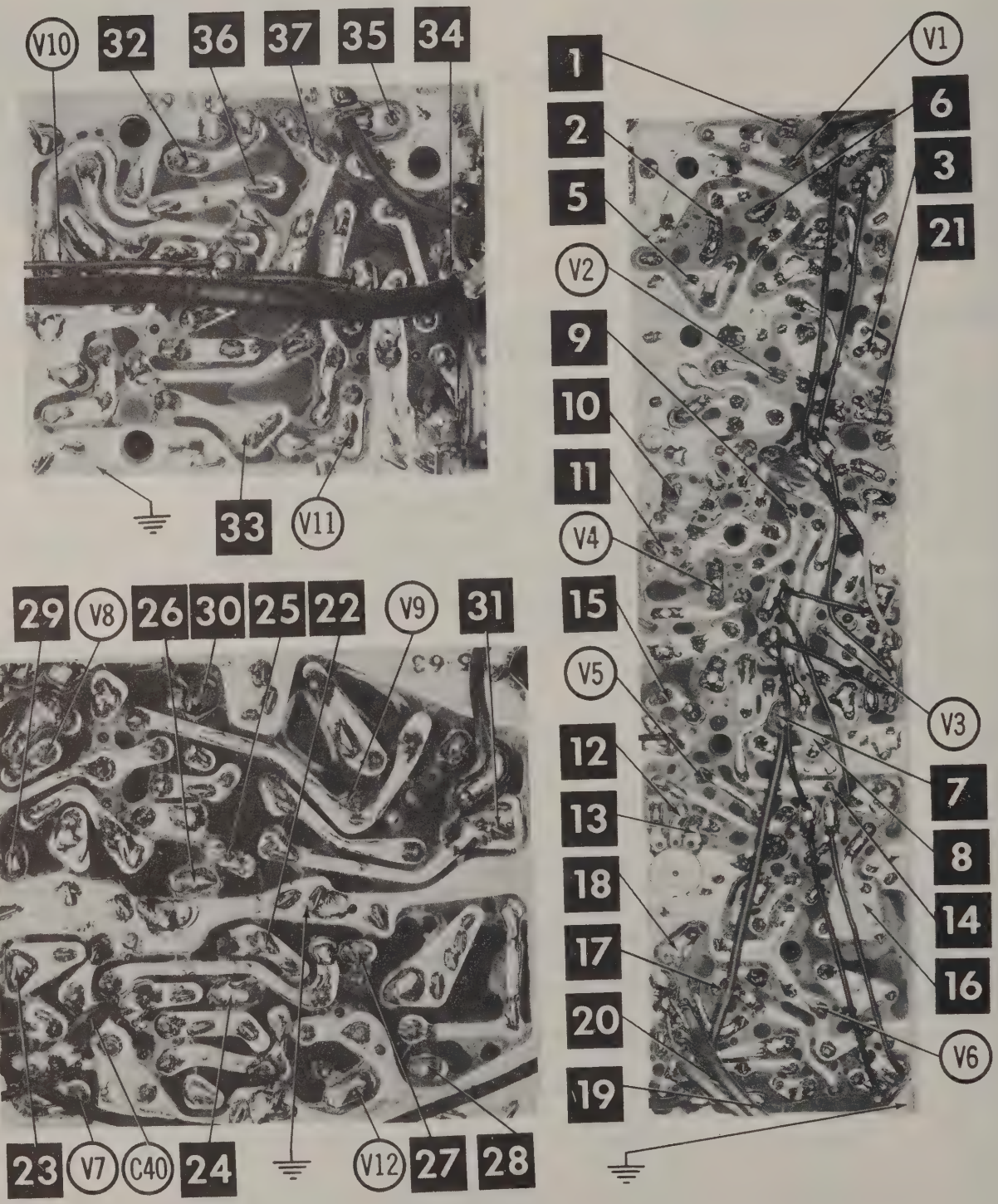
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

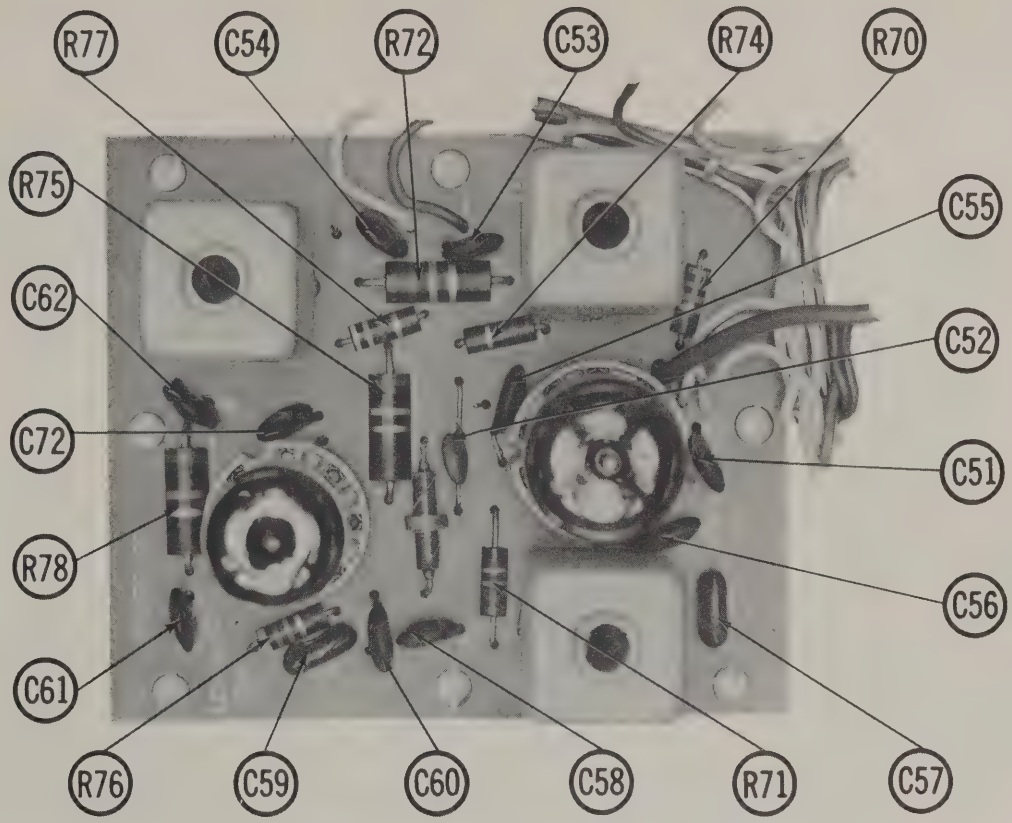
Connect either 50Ω dummy load or the normally used antenna system.

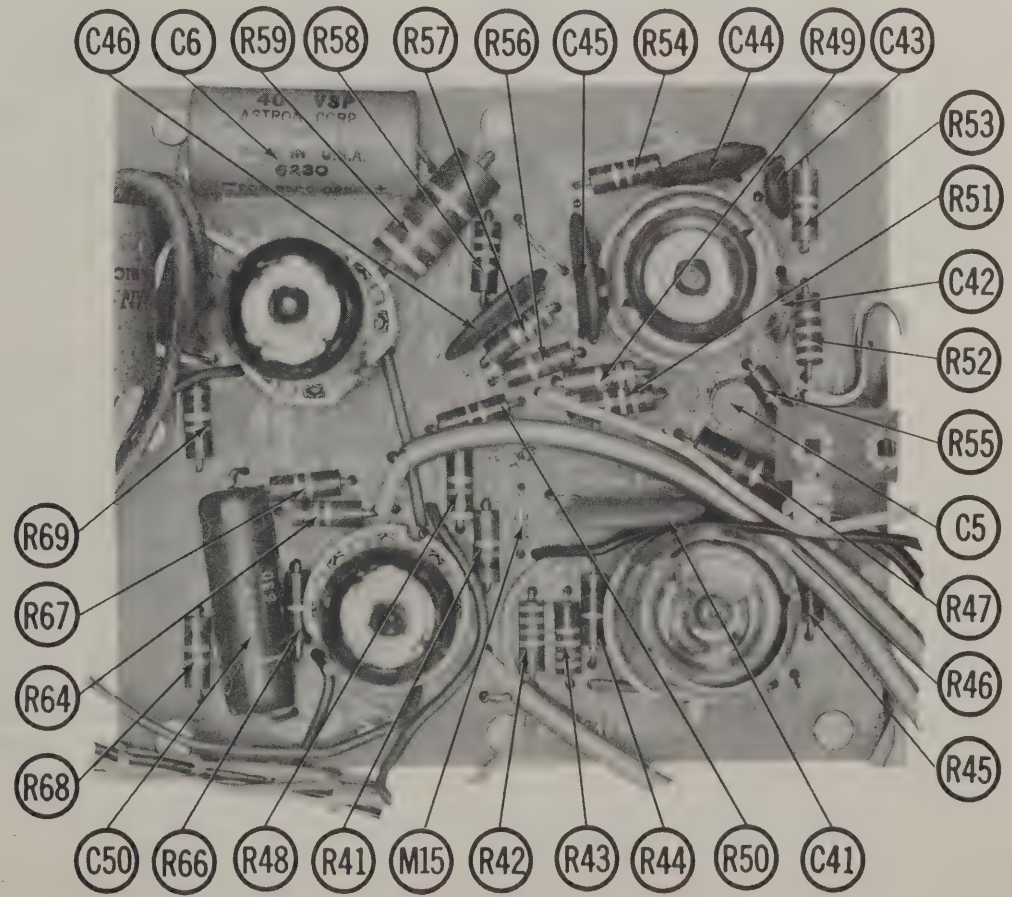
INDICATOR	ADJUST	REMARKS
Field strength meter.	A13, A14	Key transmitter. Adjust for maximum indication.
"	A15	Key transmitter. Adjust clockwise to MINIMUM indication, then counterclockwise until an abrupt increase is noted. Turn slug 1/4 turn further counterclockwise. Readjust if necessary until oscillator starts reliably each time the transmitter is keyed. If widely separated channels are used, A13 and A14 should be adjusted to some compromise frequency. However, A15 should be adjusted to the highest channel used.

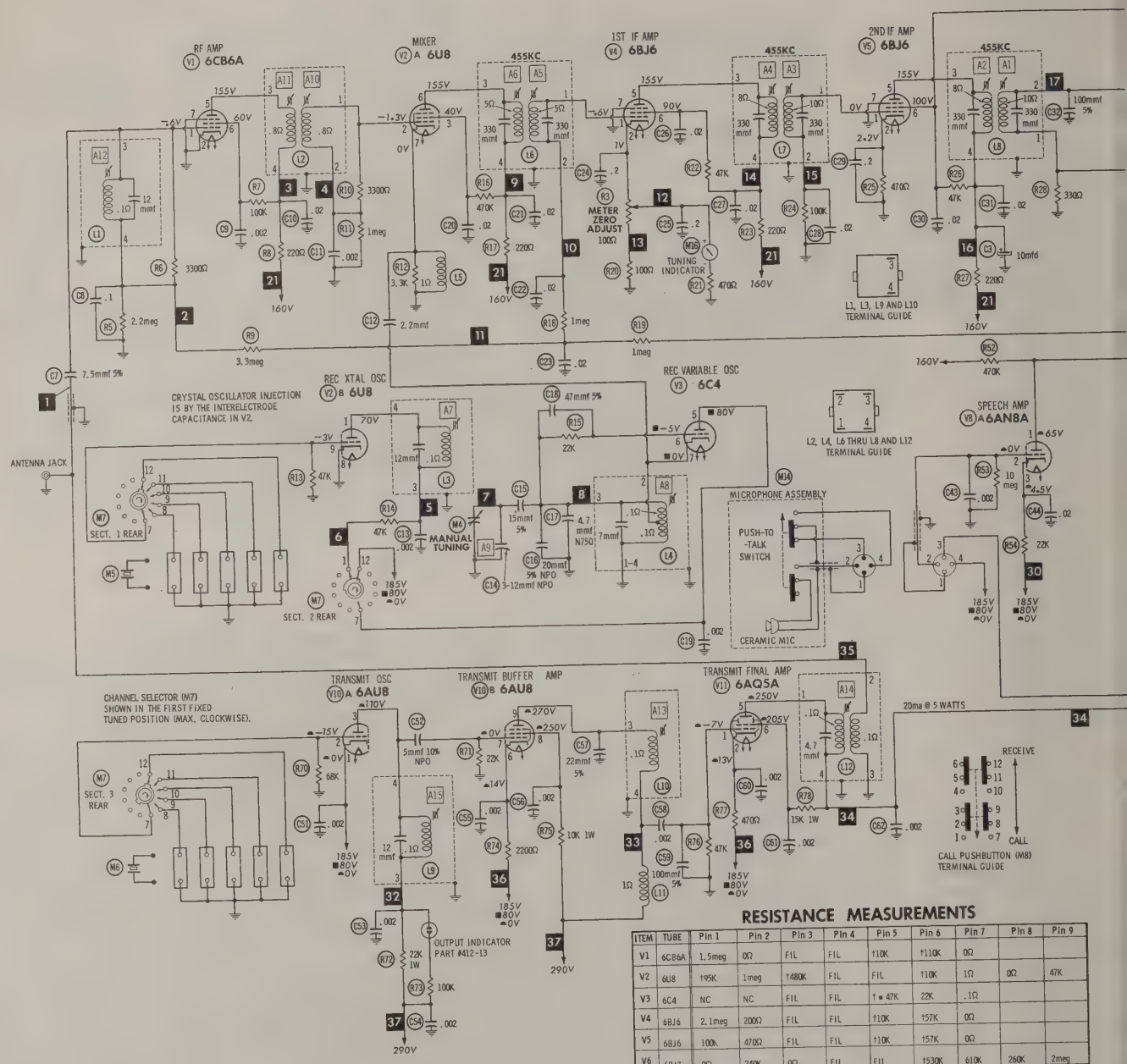
© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY523



A Howard W. Sams CIRCUITRACE® Photo


R77
C54
R72
C53
R74
R70
R75
C55
C62
C52
C72
C51
R78
C56
C61
R76
C59
C60
C58
R71
C57


C46
C6
R59
R58
R57
R56
C45
R54
C44
R49
C43
R53
R51
C42
R52
R55
C5
R47
R46
R45
R69
R67
R64
R68
C50
R66
R48
R41
M15
R42
R43
R44
R50
C41


RF AMP V1 6CB6A
MIXER V2 A 6U8
1ST IF AMP V4 6BJ6
2ND IF AMP V5 6BJ6
455KC
REC XTAL OSC V2 B 6U8
REC VARIABLE OSC V3 6C4
SPEECH AMP V8 A 6AN8A
CRYSTAL OSCILLATOR INJECTION IS BY THE INTERELECTRODE CAPACITANCE IN V2.
METER ZERO ADJUST 100Ω
TUNING INDICATOR
L1, L3, L9 AND L10 TERMINAL GUIDE
L2, L4, L6 THRU L8 AND L12 TERMINAL GUIDE
ANTENNA JACK
SECT. 1 REAR
SECT. 2 REAR
MANUAL TUNING
MICROPHONE ASSEMBLY
PUSH-TO-TALK SWITCH
CERAMIC MIC
TRANSMIT OSC V10 A 6AU8
TRANSMIT BUFFER AMP V10 B 6AU8
TRANSMIT FINAL AMP V11 6AQ5A
CHANNEL SELECTOR (M7) SHOWN IN THE FIRST FIXED TUNED POSITION (MAX. CLOCKWISE).
SECT. 3 REAR
OUTPUT INDICATOR PART #412-13
20ma @ 5 WATTS
RECEIVE
CALL
CALL PUSHBUTTON (M8) TERMINAL GUIDE

RESISTANCE MEASUREMENTS

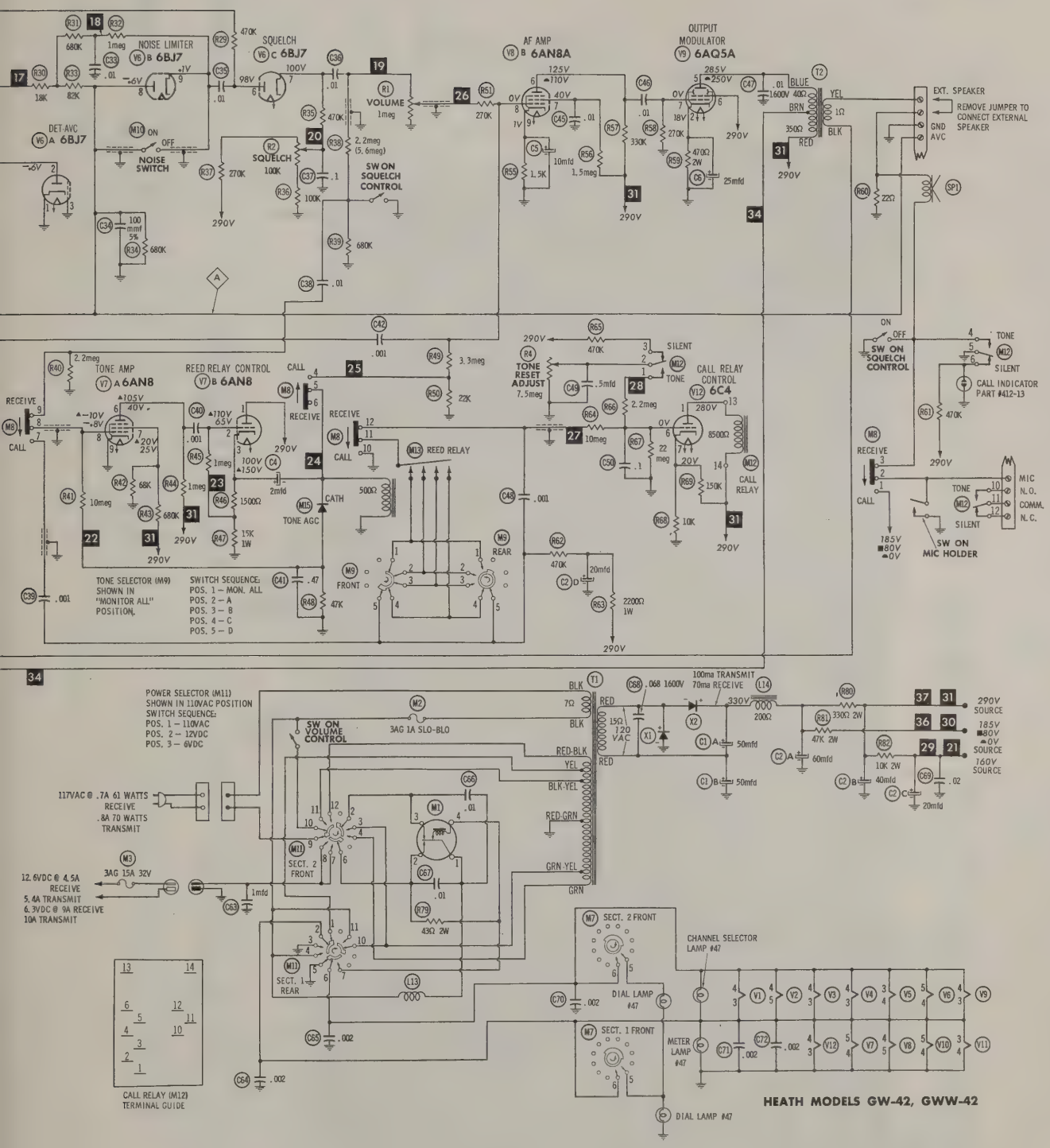
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CB6A	1.5meg	0Ω	FIL	FIL	†10K	†110K	0Ω		
V2	6U8	†95K	1meg	†480K	FIL	FIL	†10K	1Ω	0Ω	47K
V3	6C4	NC	NC	FIL	FIL	† ▪ 47K	22K	.1Ω		
V4	6BJ6	2.1meg	200Ω	FIL	FIL	†10K	†57K	0Ω		
V5	6BJ6	100K	470Ω	FIL	FIL	†10K	†57K	0Ω		
V6	6BJ7	0Ω	240K	0Ω	FIL	FIL	†530K	610K	260K	2meg
V7	6AN8	†530Ω	1meg	16K	FIL	FIL	†1meg	†150K	▲10meg 2meg	0Ω
V8	6AN8A	†480K	10meg	▪ 22K	FIL	FIL	†330K	†1.5meg	280K	1500Ω
V9	6AQ5A	NC	470Ω	FIL	FIL	†920Ω	†530Ω	270K		
V10	6AU8	▪ 0Ω	68K	†22K	FIL	FIL	▪ 2200Ω	22K	†10K	†530Ω
V11	6AQ5A	47K	▪ 470Ω	FIL	FIL	†680Ω	†15K	NC		
V12	6C4	†90000Ω	NC	FIL	FIL	NC	22meg	10K		
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

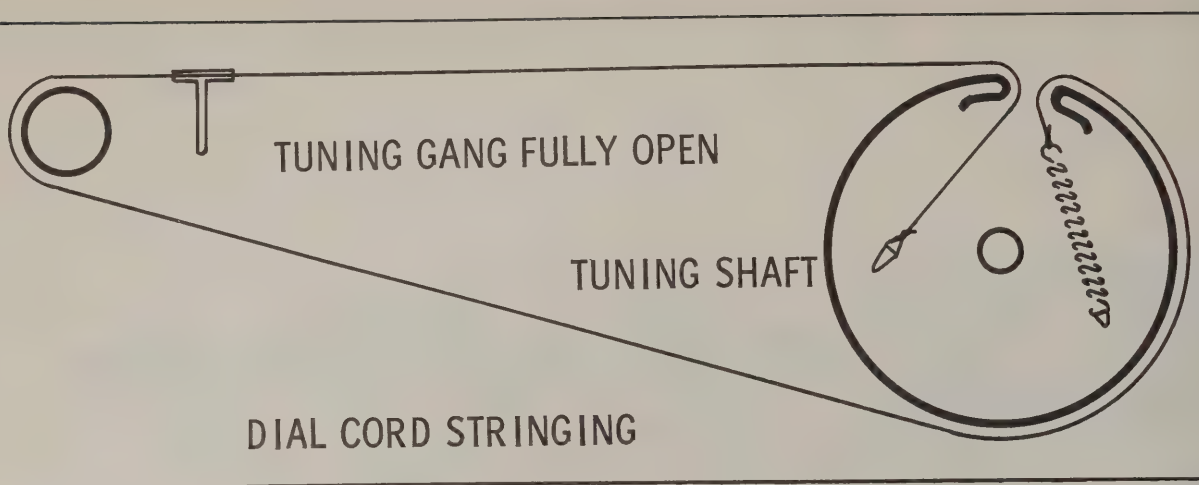
ALL MEASUREMENTS MADE IN RECEIVE, FIXED TUNED POSITION UNLESS OTHERWISE DESIGNATED.
▪ MEASURED IN TRANSMIT POSITION.
▲ MEASURED WITH CALL BUTTON DEPRESSED
† MEASURED FROM OUTPUT OF X2.
■ MEASURED IN VARIABLE TUNING POSITION
NC NO CONNECTION.

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

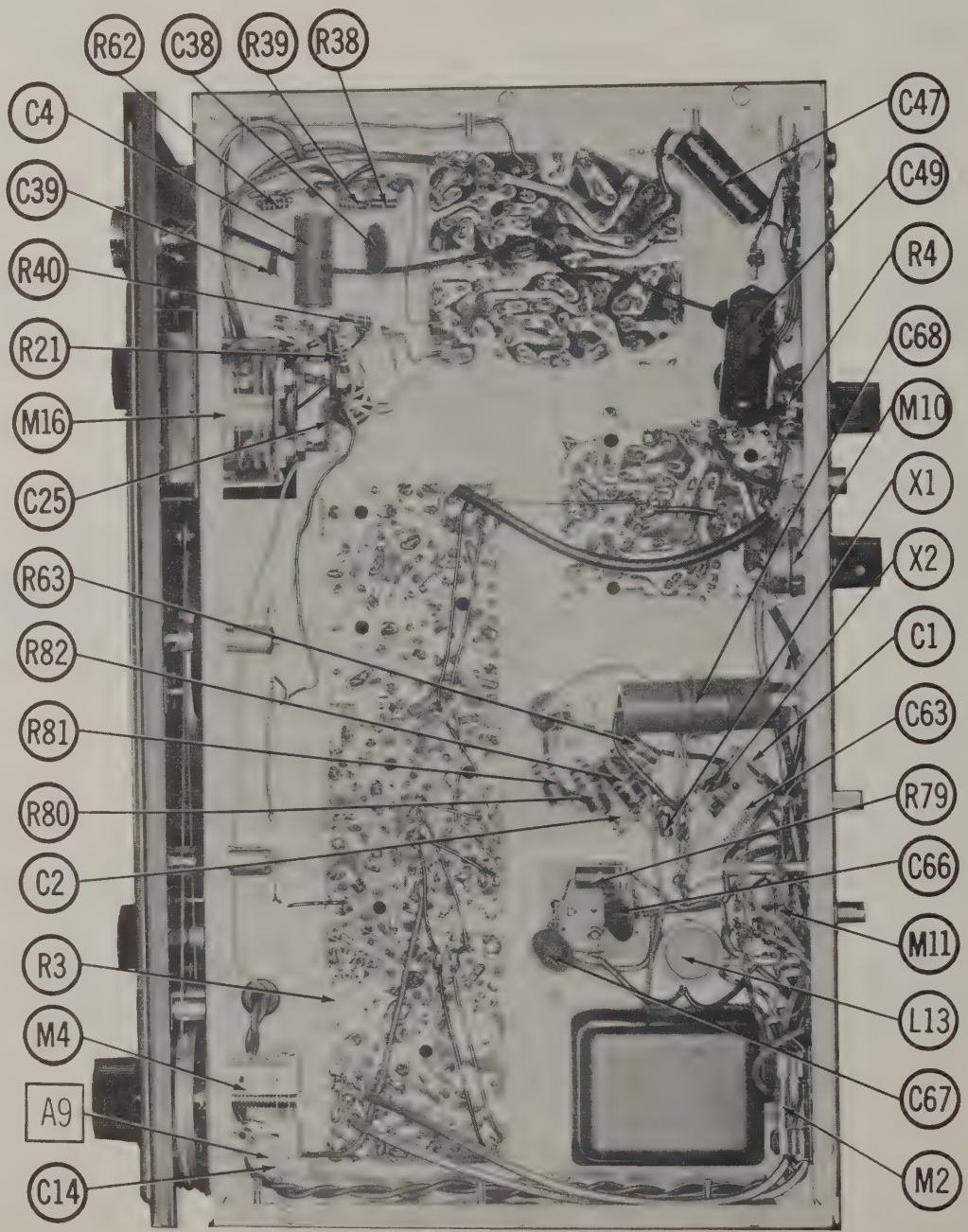
A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

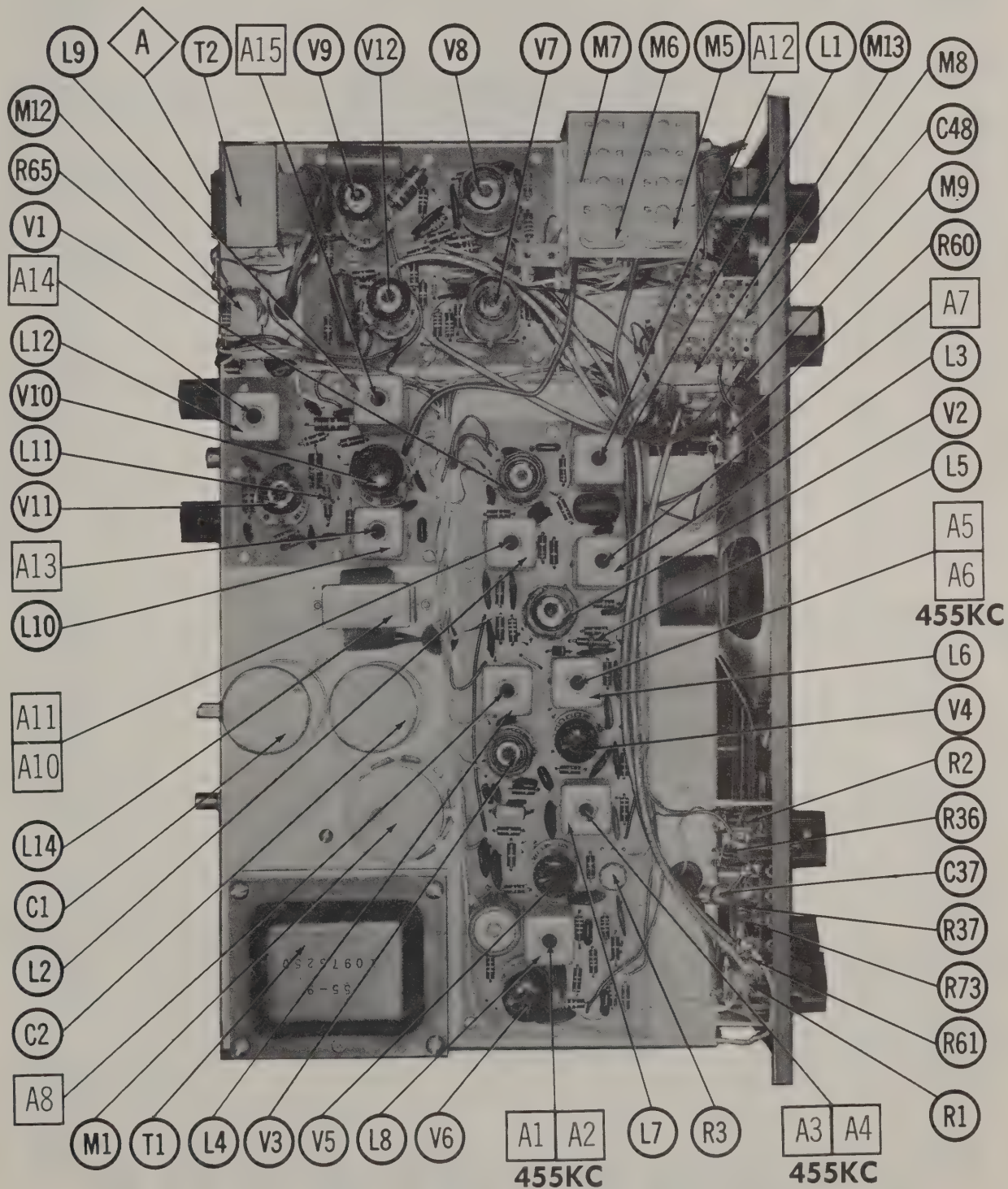
©Howard W. Sams & Co., Inc, 1964

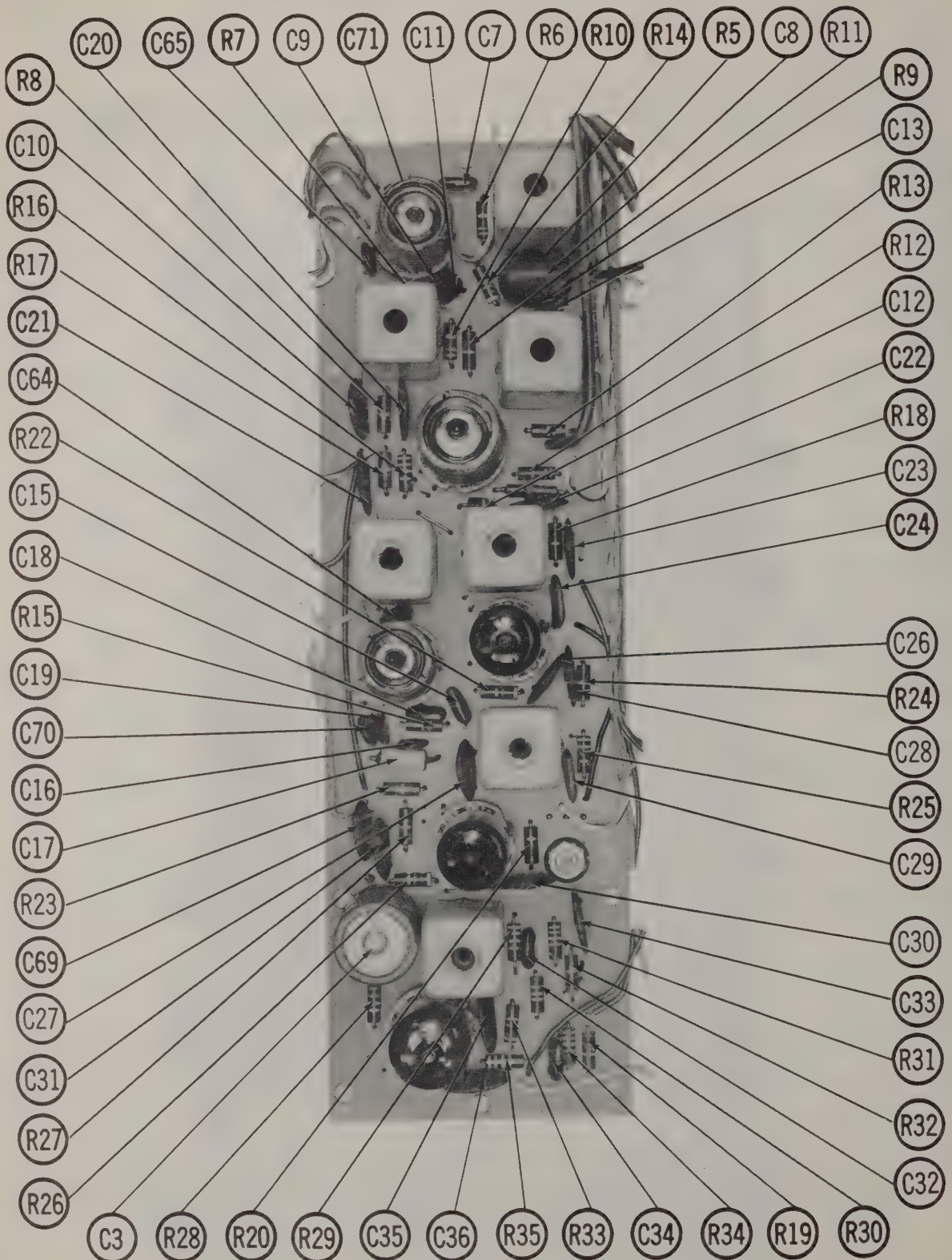

NOISE LIMITER V6B 6BJ7
SQUELCH V6C 6BJ7
AF AMP V8B 6AN8A
OUTPUT MODULATOR V9 6AQ5A
DET-AVC V6A 6BJ7
NOISE SWITCH
SQUELCH 100K
SW ON SQUELCH CONTROL
VOLUME 1meg
EXT. SPEAKER
REMOVE JUMPER TO CONNECT EXTERNAL SPEAKER
TONE AMP V7A 6AN8
REED RELAY CONTROL V7B 6AN8
TONE RESET ADJUST 7.5meg
CALL RELAY CONTROL V12 6C4
REED RELAY
TONE AGC
SW ON SQUELCH CONTROL
CALL INDICATOR PART #412-13
SW ON MIC HOLDER
TONE SELECTOR (M9) SHOWN IN "MONITOR ALL" POSITION.
SWITCH SEQUENCE: POS. 1 – MON. ALL POS. 2 – A POS. 3 – B POS. 4 – C POS. 5 – D
POWER SELECTOR (M11) SHOWN IN 110VAC POSITION SWITCH SEQUENCE: POS. 1 – 110VAC POS. 2 – 12VDC POS. 3 – 6VDC
SW ON VOLUME CONTROL
3AG 1A SLO-BLO
117VAC @ .7A 61 WATTS RECEIVE .8A 70 WATTS TRANSMIT
12.6VDC @ 4.5A RECEIVE 5.4A TRANSMIT 6.3VDC @ 9A RECEIVE 10A TRANSMIT
3AG 15A 32V
100ma TRANSMIT 70ma RECEIVE
290V SOURCE
185V ■80V ▲0V SOURCE
160V SOURCE
SECT. 2 FRONT
SECT. 1 REAR
SECT. 1 FRONT
SECT. 2 FRONT
CHANNEL SELECTOR LAMP #47
DIAL LAMP #47
METER LAMP #47
CALL RELAY (M12) TERMINAL GUIDE
HEATH MODELS GW-42, GWW-42



DIAL CORD STRINGING




L9
A
T2
A15
V9
V12
V8
V7
M7
M6
M5
A12
L1
M13
M8
C48
M9
R60
A7
L3
V2
L5
A5
A6
455KC
L6
V4
R2
R36
C37
R37
R73
R61
R1
A3
A4
455KC
L7
R3
A1
A2
455KC
M12
R65
V1
A14
L12
V10
L11
V11
A13
L10
A11
A10
L14
C1
L2
C2
A8
M1
T1
L4
V3
V5
L8
V6


C20
C65
R7
C9
C71
C11
C7
R6
R10
R14
R5
C8
R11
R8
C10
R16
R17
C21
C64
R22
C15
C18
R15
C19
C70
C16
C17
R23
C69
C27
C31
R27
R26
R9
C13
R13
R12
C12
C22
R18
C23
C24
C26
R24
C28
R25
C29
C30
C33
R31
R32
C32
C3
R28
R20
R29
C35
C36
R35
R33
C34
R34
R19
R30

PARTS LIST AND DESCRIPTION

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
	◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆				
V1	RF Amp.	6CB6A	V7	Tone Amp. -Reed Relay Control	6AN8
V2	Mixer-Rec. Crystal Osc.	6U8	V8	AF Amp. -Speech Amp.	6AN8A
V3	Rec. Variable Osc.	6C4	V9	Output - Modulator	6AQ5A
V4	1st IF Amp.	6BJ6	V10	Transmit Osc. -Buffer	6AU8
V5	2nd IF Amp.	6BJ6	V11	Transmit Final	6AQ5A
V6	Det. -AVC-Noise Limiter-Squelch	6BJ7	V12	Call Relay Control	6C4

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.100A	57-27	VB400 (or A300*)	1N3194 or 1N3254	F4 or 40H
X2	.100A	57-27		1N3194 or 1N3254	F4 or 40H

* 2 Units Required.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	HEATH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲50	200	25-58	PRS1585	BR50-250				
B	▲50	200		PRS1585	BR50-250				
C2A	▲60	450							
B	■40	350	25-93	AFH4-93-50	CO365			FP450.16	TVLS-4708.10 *
C	▲20	350			BR20-250				
D	20	250							
C3	10	350	25-94	PRS-1620	BR10-450	QT1-6	TD-10-450	TC62	TVA-1604
C4	2	150	25-39	CRE951A	NLW2-150	QT1-1	MLV2-150	TT150X2	TE-1501
C5	10	12	25-115	BCD12010	ECPB408	MT1-5	MLV10-12	PET1760	VL-1127
C6	25	25	25-44	PRS1260	BBR25-25	QT1-11	TD-25-25	TC26	TVA-1205

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	7.5 5%							
C8	.1 400V		P488N-1	DF-104	WMF4P1	4CP-4-104	GEM401	4TM-P10
C9	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C10	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C11	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C12	2.2		R1CC2ICOK229C	TCZ-2R2	C10V22C	CCTO-2R2	CNO522	10TCC-V22
C13	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C14	3-12 NPO			822-FZ			ST553-Z	
C15	15 5%		ADM-15-150		CD10C150J	DM-10-150J		MS-415
C16	20 5% NPO		NPO-DI 20	DTZ-20	C10Q2C			10TCC-Q20
C17	4.7 N750		R1CC2IU2J509C	TCN-5	C10V5U	CCTN-050	CN7547	10TCU-V50
C18	47 5%		ADM-15-470	CPR-47J	CD10E470J	DM-10-470J		MS-447
C19	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C20	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C21	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C22	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C23	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C24	.2 10V			UK10-204				HY-325
C25	.2 10V			UK10-204				HY-325
C26	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C27	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C28	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C29	.2 10V			UK10-204				HY-325

FIXED CAPACITORS(cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C30	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C31	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C32	100 5%		ADM-15-101	CPR-100J	CD15F101K	DM-10-101J	MCE235	MS-31
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C34	100 5%		ADM-15-101	CPR-100J	CD15F101K	DM-10-101J	MCE235	MS-31
C35	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C36	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C37	.1 200V		P288N-1	DF-104	WMF2P1	2CP-4-104	GEM201	2TM-P10
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C39	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C40	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C41	.47 10V			UK10-474	H5			HY-330
C42	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C43	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C44	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C45	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C46	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C47	.01 1600V		VBC-27	DD16-103	PKM16S1	16CP-4-103	GEM1611	MB-S1
C48	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C49	.5 200V		P288N-5		WMF2P47	2CP-6-504	GEM205	2TM-P50
C50	.1 200V		P288N-1	DF-104	WMF2P1	2CP-4-104	GEM201	2TM-P10
C51	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C52	5 10% NPO		NPO-DI 5	DTZ-4R7	C10V47C	CCTO-050	CNO547	10TCC-V50
C53	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C54	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C55	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C56	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C57	22 5%		ADM-15-220	CPR-22J	CD15E220J	DM-10-220J		MS-422
C58	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C59	100 5%		ADM-15-101	CPR-100J	CF15F101K	DM-10-101J	MCE235	MS-31
C60	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C61	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C62	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C63	1mfd 200V		V2161-1.0		PM2W1		GEM21	2TM-M1
C64	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C65	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C66	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C67	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C68	.068 1600V							
C69	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C70	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C71	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C72	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			HEATH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Power Sw.	1meg	19-26	F2-1meg, SU204, KR1 or (B-70-S)	A47-1meg-Z, RS-2, SWE-12	B13-137, SK3, 76-1 or (BU2, CF26, SS3, GC)*	UA16A, SL2500, US41 or (RU16A, SL38, SL2500, US41) or (U53, US26)
R2	Squelch & Tone Squelch Switch	100K	19-83	F1-100K, SU204, KR2 or (B-40, KR2)	A47-100KS, RS-2, SWE-20	B11-128, SK3, 76-2 or (BU2, CF13, SS3, WF)*	UA15L, SL2500, US42 or (RU15L, SL38, SL2500, US42) or (U41, US27)
R3	Meter Zero	100Ω	10-133	JWP-101①		RV6NAYSD101A ①	
R4	Tone Reset	7.5meg	10-45	F1-7.5meg-S, SU204 or (B-90)	A47-7.5meg-S, RS-2	B11-142, SK3 or (BU2, CF69, SS3, DC1)*	UA755L, SL2500 or (U82)

* "SNAPTROL"
① Available thru your Industrial or Military Electronic Parts Distributor.

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		HEATH PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Antenna	40-501					
L2	RF	40-500					
L3	Rec. Crystal Osc.	40-501					
L4	Rec. Variable Osc.	40-502					
L5	RF Choke (30uh)	45-27	TV-180	72F335AP	RTC-8593	T972	
L6	1st IF	52-62	BC-356	16-PC1	RTC-8641	T614	
L7	2nd IF	52-64	BC-357	16-PC2	RTC-8642	T615	
L8	3rd IF	52-64	BC-357	16-PC2	RTC-8642	T615	
L9	Transmit Osc.	40-501					
L10	Transmit Buffer	40-503					
L11	RF Choke (30uh)	45-27	TV-180	72F335AP	RTC-8593	T972	
L12	Transmit Final	40-504					
L13	Hash Choke (10uh)	45-20					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L14	.100A	200Ω	2.6HY	46-3	C-2994①	C2303①	26C88 ①	C-9X①	① Drill New Mounting Hole

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	PRI. 3	HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .8A	12.6VDC @2A	6.3VDC @ 4A	55-9					
	SEC. 1								
	120VAC @.36A (AC)								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	5K Tap@ 4300Ω	3-4Ω	51-94					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		HEATH PART No.	QUAM PART No.	
SP1	3" x 5" PM 3-4Ω	401-71	35A05	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				HEATH PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	6	115∿	68-5	5372	1610	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			HEATH PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG/ S/B	1 Amp. 125V S/B	421-23		313001.	357001	MDL 1	4405
M3	3AG	15 Amp. 32V	421-7		311015	155020	AGC 15	HHJ

MISCELLANEOUS

ITEM No.	PART NAME	HEATH PART No.	NOTES
M4	Tuning Cap.	26-88	Manual Tuning
M5	Crystal		Receive (Part Numbers are consecutive from 404-44 for Channel 1 to 404-66 for Channel 23)
M6	Crystal		Transmit (Part Numbers are consecutive from 404-14 for Channel 1 to 404-36 for Channel 23)
M7	Switch	63-319	Channel Selector (3 Section Rotary)
M8	Switch	64-20	Receive-Call (Spring Loaded Slide)
M9	Switch	63-328	Tone Selector (Single Section Rotary)
M10	Switch	63-102	Noise Limiter (SPST, Rotary Snap)
M11	Switch	63-320	Power Selector (2 Section Rotary)
M12	Relay	69-14	Call (3PDT)
M13	Reed Relay	69-27	Tone Squelch. (Specify Part Number and Tone Group Letter on Unit)
M14	Microphone Ass'y.	480-29	Includes Push-To-Talk Switch
M15	Diode	56-4	Tone AGC
M16	Meter	407-67	Tuning Indicator

CABINETS & CABINET PARTS

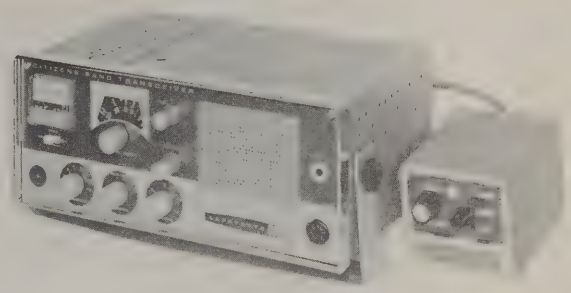
(When Ordering Specify Model, Chassis & Color)

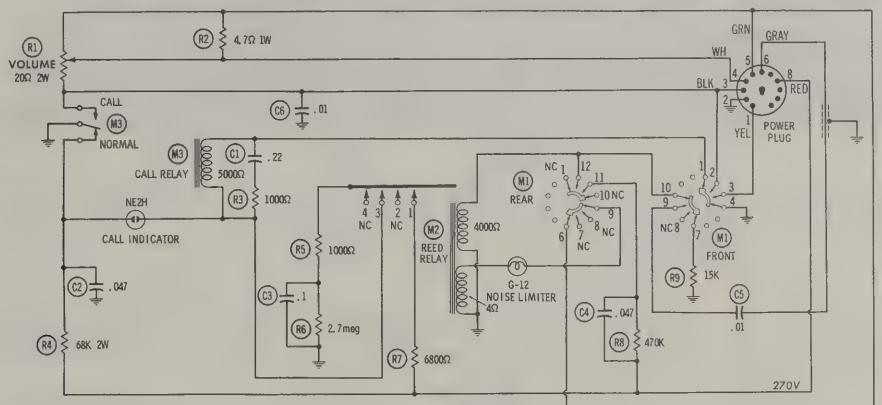
ITEM	PART No.	ITEM	PART No.
Dial	100-M432	Tone Reset, Noise Limiter	462-159
Dial Window	446-39F880-887	Pushbutton - Call (White)	462-M132
Dial Pointer	463-20	Rubber Feet	261-6
Dial Cord Assembly	100-M221	Speaker Grille	209-39F
Dial Numbers (Full Set)	390-131	Front Panel	203-M346F879
Knob - Tuning	462-139	Front Panel Trim Plate	203-345F882
Knob - Channel Selector	462-140	Cabinet	90-M256F
Knob - Tone, Volume, Squelch	462-187	Microphone Bracket	204-M512

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)

TRADE NAME:	Lafayette Models HA100, HB111
SUPPLIER:	For Current Address, See Master Index
TYPE SET:	7 Tube, 2 Transistor Transceiver
POWER SUPPLY:	110 — 120 Volts AC, 60 Cycles (or) 12 Volt Storage Battery
RATING:	60 Watts, .53 Amp. @ 117VAC (Receive) 68 Watts, .6 Amp. @ 117VAC (Transmit) 4.4 Amp. @ 12.6VDC (Receive) 5 Amp. @ 12.6VDC (Transmit)
TUNING RANGE:	Any 8 of CB Channels 1 thru 23 Receiver may be continuously tuned.





MODEL HA-100

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964

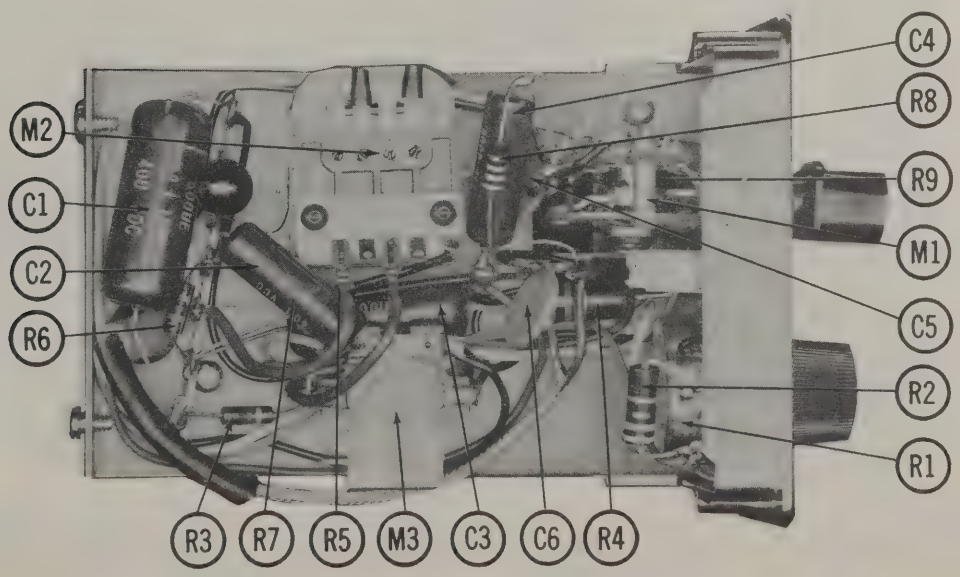
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

FUNCTION SWITCH (M1) SHOWN IN STANDBY POSITION (MAX. CCW.)
SWITCH SEQUENCE:

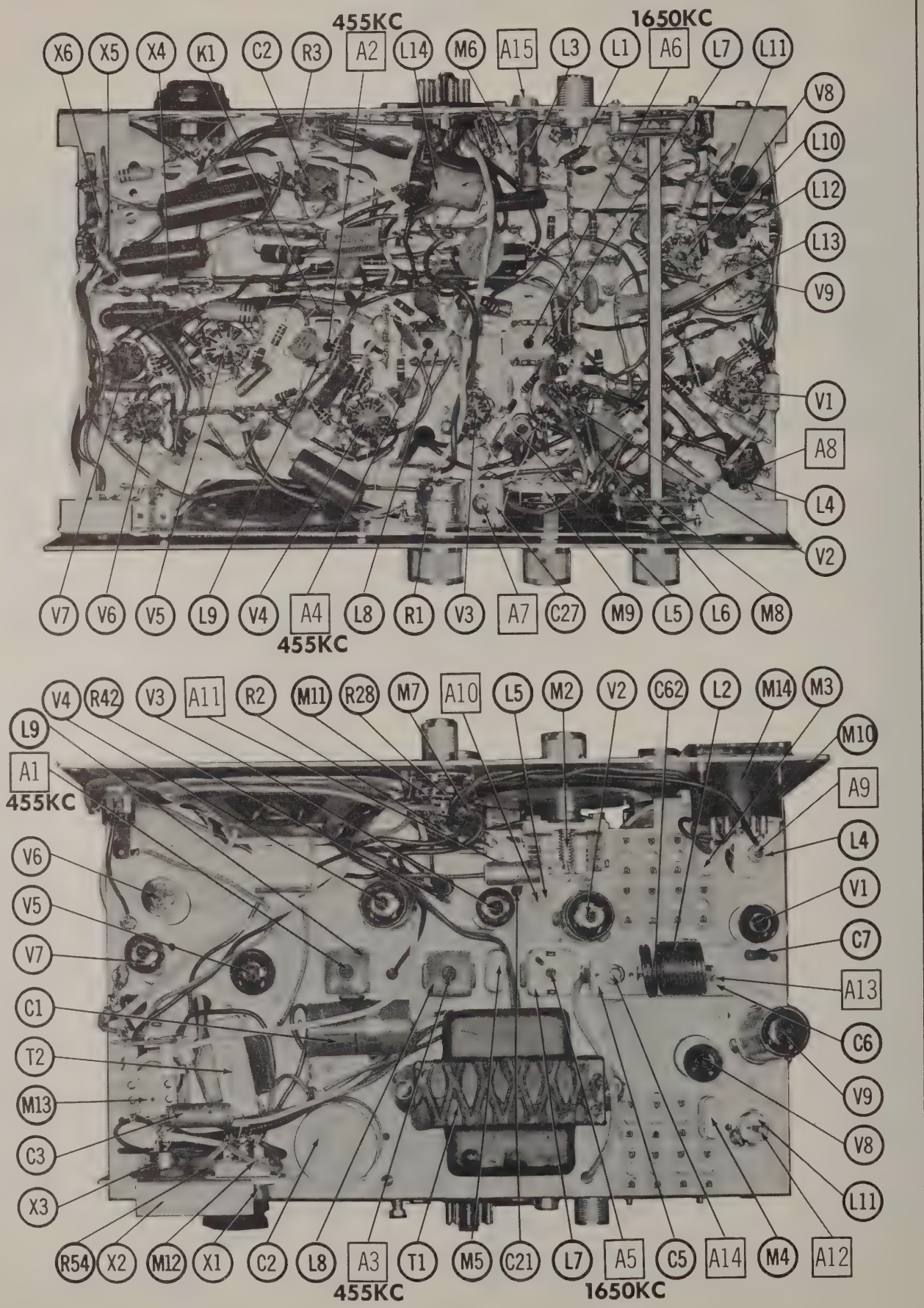
POS. 1	STANDBY
POS. 2	NORMAL
POS. 3	CALL

REED FREQUENCIES:

1	368.5 CYCLES
2	330.5 CYCLES
3	296.5 CYCLES
4	266.0 CYCLES



© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY529


455KC
1650KC
X6
X5
X4
K1
C2
R3
A2
L14
M6
A15
L3
L1
A6
L7
L11
V8
L10
L12
L13
V9
V1
A8
L4
V2
V7
V6
V5
L9
V4
A4
455KC
L8
R1
V3
A7
C27
M9
L5
L6
M8
V4
R42
V3
A11
R2
M11
R28
M7
A10
L5
M2
V2
C62
L2
M14
M3
M10
L9
A1
455KC
A9
L4
V6
V5
V7
V1
C7
C1
A13
T2
C6
M13
V9
C3
V8
X3
L11
R54
X2
M12
X1
C2
L8
A3
455KC
T1
M5
C21
L7
A5
1650KC
C5
A14
M4
A12

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A9, A11, A14. GENERAL CEMENT #5907, 8607, 8727
WALSCO #2515
A10, A12, A13..... GENERAL CEMENT #8196, 8722, 8272
WALSCO #2515, 2516, 2518

A15..... GENERAL CEMENT #8606, 9295, 8282
WALSCO #2526, 2543, 2544

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage, to point (A) or use front panel "S" meter.
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on the VTVM.
Set receive switch to xtal. position unless otherwise designated.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 7 of V3 (Conv.), low side to chassis (455KC Unmod.)	Any	A1, A2, A3, A4	Adjust for maximum indication.
High side thru .01mfd to pin 2 of V2 (1st Mixer), low side to chassis. (1650KC Unmod.)	Any	A5, A6	"
High side thru .1mfd to antenna jack, low side to chassis (27.085MC Unmod.)	11 (27.085MC)	A7, A8 A9	"
High side thru .1mfd to antenna jack, low side to chassis. (26.965MC Unmod.)	1 (26.965MC)	A10	Set Receive Switch to Tune position. Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis (27.255MC Unmod.)	23 (27.255MC)	A11	"

TRANSMITTER ALIGNMENT

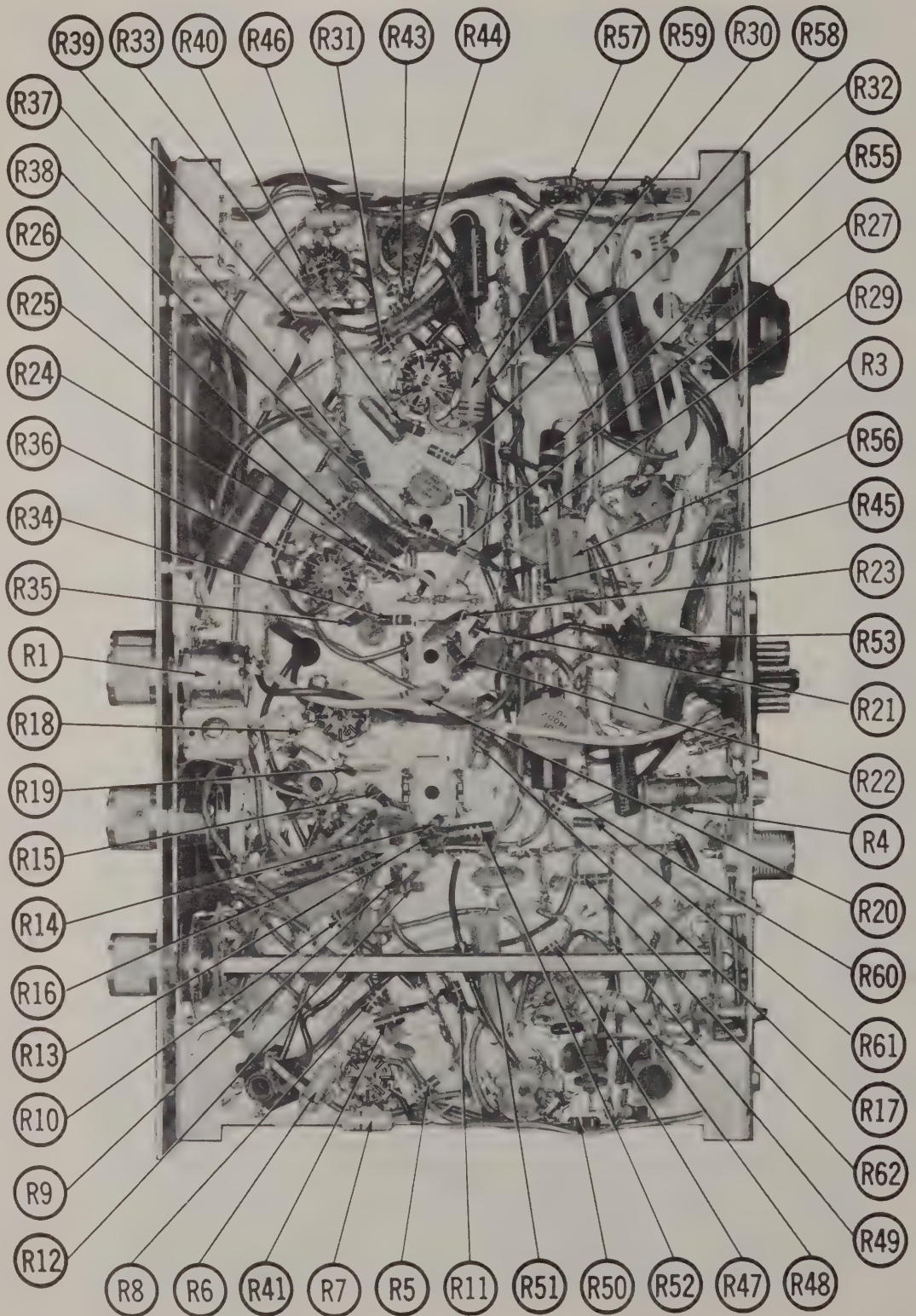
Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

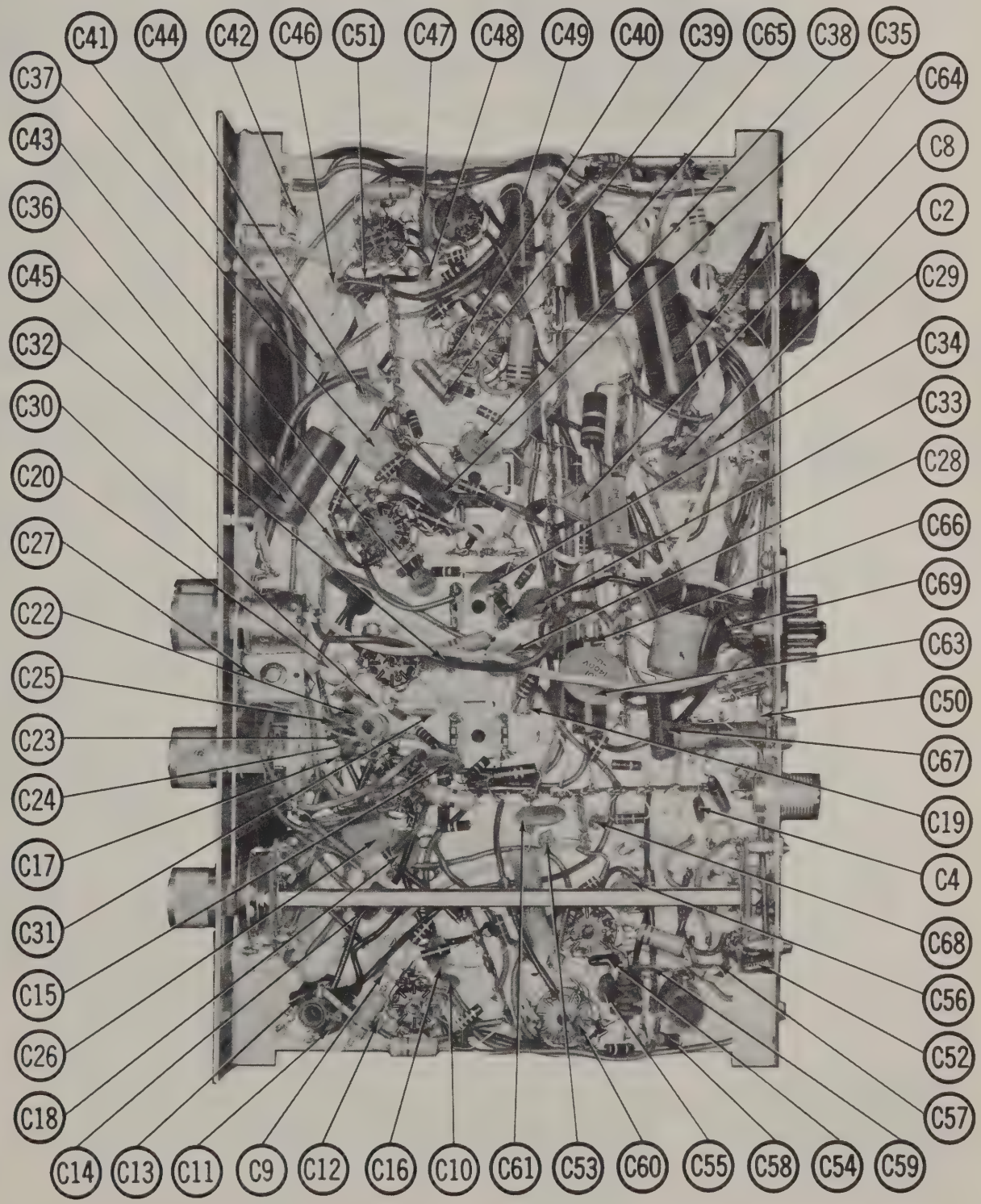
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

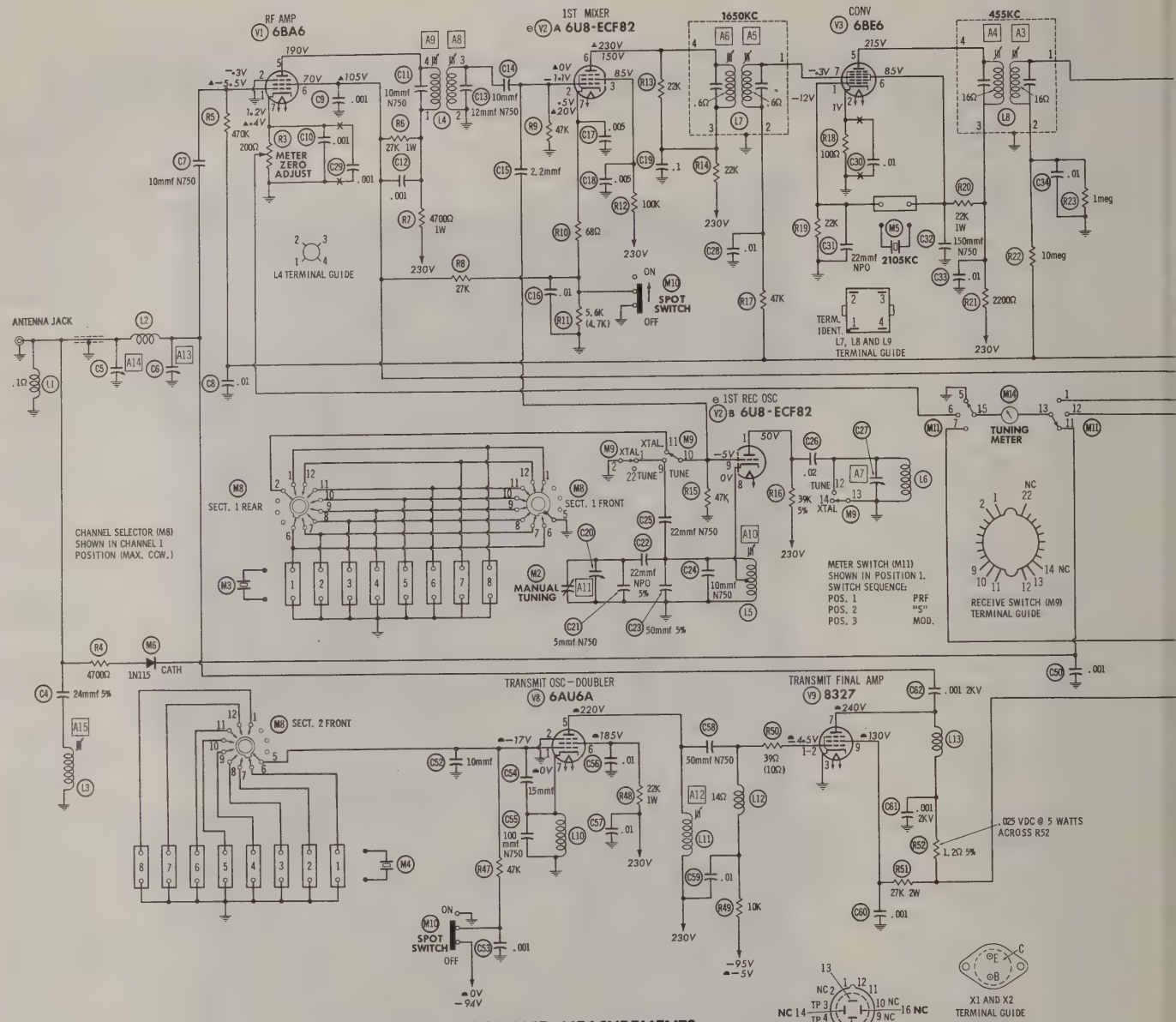
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50Ω dummy load or the normally used antenna system.
Set Channel Selector to the nearest usable channel to channel 11 (27.085MC).

INDICATOR	ADJUST	REMARKS
Field strength meter or front panel "PRF" meter	A12, A13, A14	Key transmitter. Adjust for maximum indication. Be certain DC voltage across R52 (1.2Ω) does not exceed .025V.
Receiver tuned to 54MC or television receiver tuned Channels 2 thru 6.	A15	Key transmitter, Adjust for MINIMUM indication.


R39
R33
R40
R46
R31
R43
R44
R57
R59
R30
R58
R37
R32
R38
R55
R26
R27
R25
R29
R24
R3
R36
R56
R34
R45
R35
R23
R1
R53
R18
R21
R19
R22
R15
R4
R14
R20
R16
R60
R13
R61
R10
R17
R9
R62
R12
R49
R8
R6
R41
R7
R5
R11
R51
R50
R52
R47
R48


C41
C44
C42
C46
C51
C47
C48
C49
C40
C39
C65
C38
C35
C37
C43
C36
C45
C32
C30
C20
C27
C22
C25
C23
C24
C17
C31
C15
C26
C18
C64
C8
C2
C29
C34
C33
C28
C66
C69
C63
C50
C67
C19
C4
C68
C56
C52
C57
C14
C13
C11
C9
C12
C16
C10
C61
C53
C60
C55
C58
C54
C59



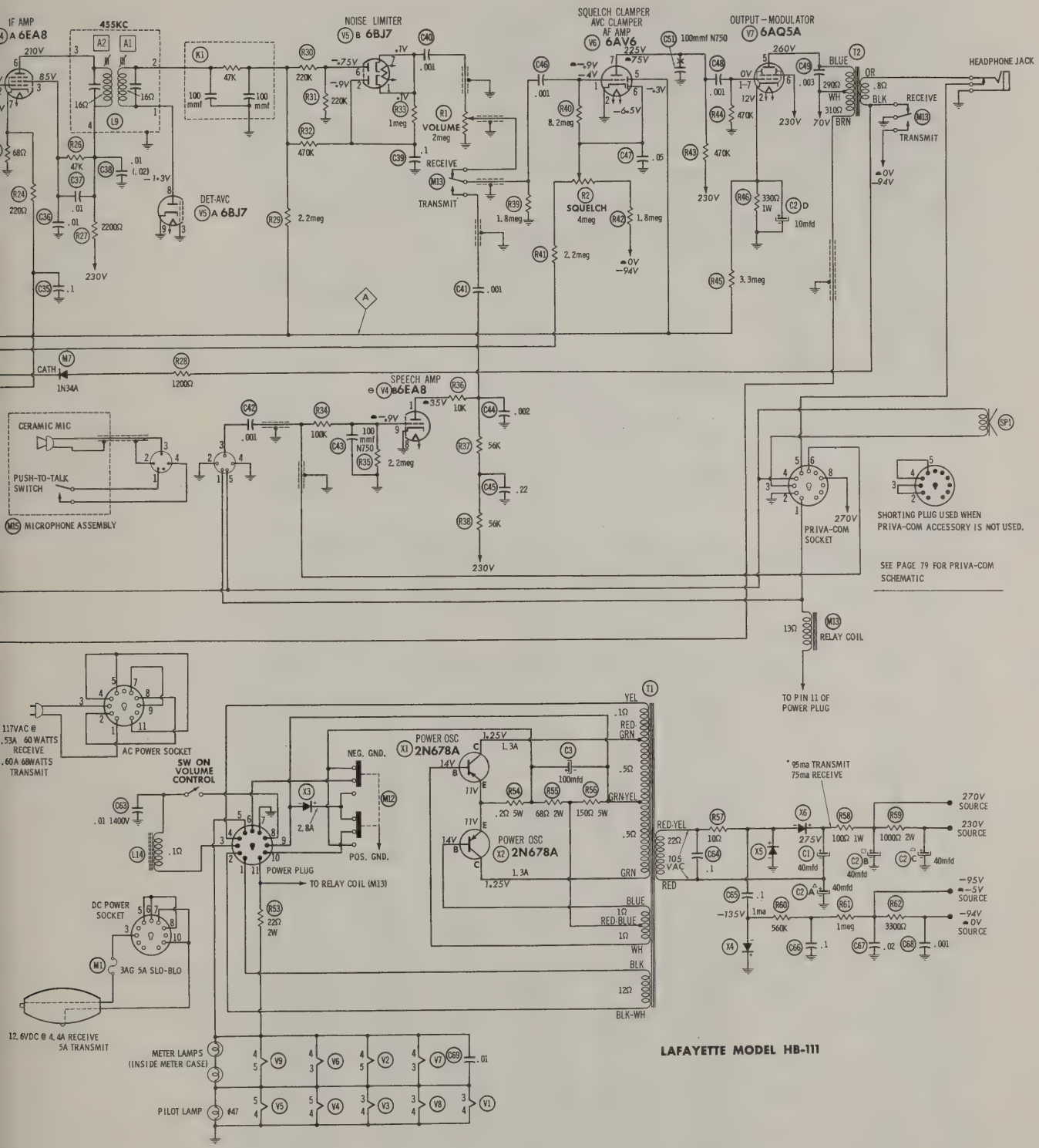
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	1.8meg	0Ω	FIL	FIL	†5800Ω	†33K	200Ω		
V2	6U8/ ECF82	†50K	47K	†100K	FIL	FIL	†23K	68Ω ▲5600Ω	0Ω	47K
V3	6BE6	22K	100Ω	FIL	FIL	†3300Ω	†25K	1.4meg		
V4	6EA8	†120K	1meg	†50K	FIL	FIL	†3300Ω	68Ω	0Ω	2.2meg
V5	6BJ7	1.9meg	900K	0Ω	FIL	FIL	220K	1.9meg	480K	0Ω
V6	6AV6	12meg	0Ω	FIL	FIL	1.3meg	3meg	†470K		
V7	6AQ5A	NC	330Ω	FIL	FIL	†390Ω	†1100Ω	470K		
V8	6AU6A	▲ 47K	0Ω	FIL	FIL	†1100Ω	†23K	0Ω		
V9	8327	NC	▲ 13K	0Ω	FIL	FIL	NC	†410Ω	NC	†27K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED WITH SPOT SWITCH ON
▲ MEASURED IN TRANSMIT POSITION
† MEASURED FROM OUTPUT OF X6
NC NO CONNECTION.

⊖ See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964



LAFAYETTE MODEL HB-111

MODEL HB-111 PARTS LIST AND DESCRIPTION

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V1	RF Amp.	6BA6
V2	1st Mixer-1st Rec. Osc.	6U8/ECF82 (6EA8)*
V3	Converter	6BE6
V4	IF Amp.-Speech Amp	6EA8 (6U8)*
V5	Det. -AVC-Noise Limiter	6BJ7
V6	AF Amp-AGC Clamper-Squelch Clamper	6AV6
V7	Output - Modulator	6AQ5A
V8	Transmit Osc. -Doubler	6AU6A
V9	Transmit Final	8327

* Alternate

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA: DELCO PART No.	REPLACEMENT DATA: GENERAL ELECTRIC PART No.	REPLACEMENT DATA: RCA PART No.	NOTES
X1	2N678A	Power Oscillator	DS503			* PNP
X2	2N678A	Power Oscillator	DS503			* PNP

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely. Check bias adjustment.

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS: MALLORY PART No.	RECTIFIERS: RCA PART No.	RECTIFIERS: SARKES TARZIAN PART No.
X3	2.8A		1N3208	40208	ST310P
X4	.001A	SR889	1N539 or A300	1N2861 or 1N3194	30H or F4
X5	.095A	SR889	1N539 〉 VB300	1N2861 or 1N3194	30H or F4
X6	.095A	SR889	1N539 〉		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	RATING: VOLT.	REPLACEMENT DATA: Lafayette PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	40	200	E-238-1	PRS1580	BR4025	QT1-14	TD-40-250	TC58	TVA-1511
C2A	▲40	200	E-237-1	AFH4-04-70	DD0471	XC4-22	TMT-3700 & TD-40-350	FP-425	TVLS4624.5*
B	■40	350							
C	▲40	350							
D	10	50							
C3	100	25		CRE623A	NLW100-25	MT1-20	MLV100-25	TT25X100	TE-1211

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	24 5%		NPO-DI 25	CPR24J	CD15E240J	DM-10-240J	MCE220	MS-424
C5								
C6								
C7	10 N750		N750-DI 10	TCN-10	C10Q1U	CCTN-100	CN7410	10TCU-Q10
C8	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C9	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C10	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C11	10 N750		N750-DI 10	TCN-10	C10Q1U	CCTN-100	CN7410	10TCU-Q10
C12	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C13	12 N750			TCN-12		CCTN-150	CN7412	10TCU-Q12
C14	10		NPO-DI 10	D6-100	CD15C100K	DM-10-100J	MCE215	MS-41
C15	2.2		NPO-DI 2.2	D6-030	C10V22C	CCTO-2R2	CNO522	10TCC-V22
C16	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C17	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C18	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C19	.1 400V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C20								
C21	5 N750			TCN-5	C10V5U	CCTN-050	CN7550	10TCU-V50
C22	22 NPO 5%		NPO-DI 22	TCZ-22	C10Q22C	CCTO-220	CNO422	10TCC-Q22
C23	50 5%		NPO-DI 50	CPR-47J	CD15F510J	DM-10-500J	MCE225	MS-45
C24	10 N750		N750-DI 10	TCN-10	C10Q1U	CCTN-100	CN7410	10TCU-Q10
C25	22 N750		N750-DI 22	TCN-22	C10Q22U	CCTN-220	CN7422	10TCU-Q22
C26	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C27								
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C29	.001	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C30	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C31	22 NPO		NPO-DI 22	TCZ-22	C10Q22C	CCTO-220	CNO422	10TCC-Q22
C32	150 N750		N750-DI 150	TCN-150	C10T15U	CCTN-151	CN7315	10TCU-T15
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C35	.1 400V		P488N-1	DF-104	PM4Pa	4DP-3-104	GEM401	4TM-P10
C36	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C37	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C38	.01	(.02) †	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C39	.1 125V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C40	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C41	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C42	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C43	100 N750		N750-DI 100	TCN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C44	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C45	.22 400V		V4161-22		PM4P22	4CP-6-224	GEM4022	4PS-P22
C46	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C47	.05		P688N-047	DD-503	PM6S47	6DP-3-473	GEM6147	6TM-S47
C48	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C49	.003 600V		BPD-0033	DD-332	BYA10D33	CCD-332	B233	5HK-D33
C50	.001		BPD-001	DD-103	BYA10D1	CCD-102	B210	5HK-D10
C51	100 N750	Note 1	N750-DI 100	TCN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C52	10		NPO-DI 10	D6-100	CD15C100K	DM-10-100J	MCE215	MS-41
C53	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C54	15		NPO-DI 15	D6-150	CD10C150J	DM-10-150J		MS-415
C55	100 N750		N750-DI 100	TCN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C56	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C57	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C58	50 N750		N750-DI 50	TCN-50	C10Q5U	CCTN-470		10TCU-Q47
C59	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C60	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-S10
C61	.001 2KV		HVD-30-1000	DD30-102	HVB20D1	3CCD-102	2HV210	BL-D10
C62	.001 2KV		HVD-30-1000	DD30-102	HVB20D1	3CCD-102	2HV210	BL-D10
C63	.01 1400V		DAC-27	DD16-103	HVE16S1	16DP-3-103	UAC110	BL-S10
C64	.1 600V		P688N-1	DF-104	PM6P1	6DP-4-104	GEM601	6TM-P10
C65	.1 400V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C66	.1 400V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C67	.02 200V		P488N-022	DD-203	PM4S22	4DP-2-223	GEM4122	4TM-S22
C68	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C69	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

Note 1. Not used in some versions.
† Alternate Value.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Lafayette PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS–IRC PART No.	MALLORY PART No.
R1	Volume & Switch	2meg	V332A-2	F2-2meg, SU204, KR-1 or (B-76, KR-1)	A47-2meg-Z, FS-3, SWE-12	Q13-139, 76-1 or (BU1, CF27, SS14, GC)*	UA26A, SF1000, US-41 or(RU26A, SL38, SF1000, US-41) or (U55, US-26)
R2	Squelch	3meg	V331A-4	F1-3meg, SU204 or (B-84)	A47-3meg-S, FS-3	QCB1①, B11-140 TM5 or (BU2, CF21, SS14, DC1)*	UA36L, SF1000 or (RU36L, SL38, SF1000) or (U59, EB247)
R3	"S" Meter Zero	200Ω 2W	P325-3	WN-201 or (V-200)②	A43-200, FKS-1/4	W11-100, SK5, or (BU1, WF1, SS3)*	WW22L, SK1000

* "SNAPTROL"
① Use QCB1 instead of Tab Mount Plate in TM5. ② Use Case as Center Terminal and Insulate Case from chassis.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R54	.2Ω 5W		WT22	#W-328-22	R56	150Ω 5W	PW5-150	5W-SQ-150	#W-328-10

\# Lafayette Part Number

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Lafayette PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (5.5uh)			4609	RTC-8519	T820	
L2	Antenna Loading (12 turns)	C194-1					
L3	TV Trap	C191-2					
L4	RF	T188					
L5	Rec. Osc.	0-189					
L6	RF Choke (1.5uh)		BC-562	4604	RTC-8516	T856	
L7	1st IF (1650KC)	1-110-5		1732		TA632	
L8	2nd IF (455KC)	1-110-1	BC-353	12-C31	RTC-8633	T608	
L9	3rd IF (455KC)	1-110-1	BC-353	12-C31	RTC-8633	T608	
L10	RF Choke (2.2uh)	1104-C	BC-563	74F226AP	RTC-8517	T988	
L11	Transmit Doubler	C-1044					
L12	RF Choke (500uh)		TV-188	6174	RTC-8592	T324	
L13	RF Choke (2.2uh)	1104-C	BC-563	74F226AP	RTC-8517	T988	
L14	Hash Choke (50uh)	C-187-1					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	PRI. 2	SEC. 1	Lafayette PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @.6A	12.6VDC Input@ 2.8A	12.6VAC @2.2A	PT1042					
	SEC. 2	SEC. 4	SEC. 5						
	105VAC @.32A (AC)								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Lafayette PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	17K Tap @6500Ω	3-4Ω	T184-9					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Lafayette PART No.	QUAM PART No.	
SP1	4" PM 3-4Ω	S717-1	4A07	

PARTS LIST AND DESCRIPTION (CONTINUED)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Lafayette PART NO.	REPLACEMENT DATA
K1	Diode Filter	47K, 100mmf, 100mmf	C209-1	Aerovox PA-97 Centralab PC-50 Sprague D-1

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Lafayette PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG S/B	5A/125V S/B			313005.	155020	MDX 5	HHJ

MISCELLANEOUS

ITEM No.	PART NAME	Lafayette PART No.	NOTES
M2	Tuning Capacitor	V235D4	
M3	Crystal		Receive - Specify Channel when Ordering
M4	Crystal		Transmit - Specify Channel when Ordering
M5	Crystal		2nd Rec. Osc. (2105KC)
M6	Diode		Meter Rectifier (1N115)
M7	Diode		Meter Rectifier (1N34A)
M8	Switch	BX-866C-1	Channel Selector (2 Section 8 Position Wafer)
M9	Switch	8111	Xtal - Tune (Single Section 2 Position Enclosed)
M10	Switch		Spot (DPDT Slide)
M11	Switch		Meter (4P3T Wafer)
M12	Switch		Polarity Selector (DPDT Slide)
M13	Relay	R718-2	Transmit-Receive (DPDT 12VAC)
M14	"S" Meter	TM85	1ma. Panel Type (Includes Two Meter Lamps)
M15	Microphone Ass'y.	M868C-1	Includes Push-to-talk switch.

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Knob - Squelch, Meter Switch	K4037
Knob - Tuning, Channel Selector, Receive Switch, Volume	K4038

ITEM	PART No.
Dial Scale	DS627
Front Panel	FP9216B
Cabinet	C9217

WIRING DATA

General-use Hook-up Wire .... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead ..... Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable ..... Use BELDEN No. 8497 3 Conductor - 1 Shielded for Press-to-Talk (Neoprene)
8496 3 Conductor - 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression .... Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap ..... Use BELDEN No. 8661 (3/8 In.)

MODEL HA-100 PARTS LIST

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	.22 400V		V4161-22		PM4P22	4CP-6-224	GEM4022	4PS-P22
C2	.047 400V		P488N-047	DD-503	PM4S47	4DP-3-473	GEM4147	4TM-S47
C3	.1 400V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C4	.047 400V		P488N-047	DD-503	PM4S47	4DP-3-473	GEM4147	4TM-S47
C5	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C6	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

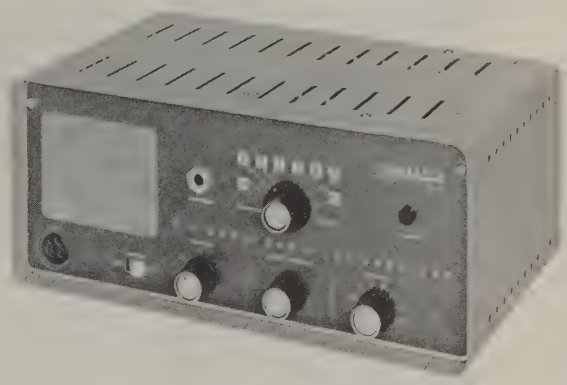
ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Lafayette PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Speaker Volume	20Ω 2W	123110	WW-200	A43-20, FS-3	WPK20 or (BU1, WF17, SS14)*	VW20

* "SNAPTROL"

MISCELLANEOUS

ITEM No.	PART NAME	Lafayette PART No.	NOTES
M1	Function Switch		4P3T. Spring Loaded in Call Position
M2	Relay	WC-299	Resonant Reed Type
M3	Relay		SPDT (5000Ω)

TRADE NAME:	Lafayette Model HB-115A
SUPPLIER:	For Current Address, see Master Index
TYPE SET:	6 Tube Transceiver
POWER SUPPLY:	110 — 120 Volts AC, 60 Cycles
RATING:	44 Watts, .45 Amp. @ 117VAC (Receive) 48 Watts, .5 Amp. @ 117VAC (Transmit)
TUNING RANGE:	Any 8 CB Channels 1 thru 23



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A4, A8.....	GENERAL CEMENT #5907, 8607, 8727 WALSCO #2515
A5, A6, A7, A9.....	GENERAL CEMENT #8196, 8722, 8272 WALSCO #2515, 2516, 2518
A10.....	GENERAL CEMENT #8606, 9295, 8282 WALSCO #2526, 2543, 2544

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage, to point (A).
Calibrate Signal Generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 9 of V1 (Mixer Grid), low side to chassis (455KC Unmod.)	Any	A1, A2, A3, A4	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis (27.085MC Unmod.)	11 (27.085MC)	A5, A6	Set Channel Tuning to Channel 11. Adjust for maximum indication.

TRANSMITTER ALIGNMENT

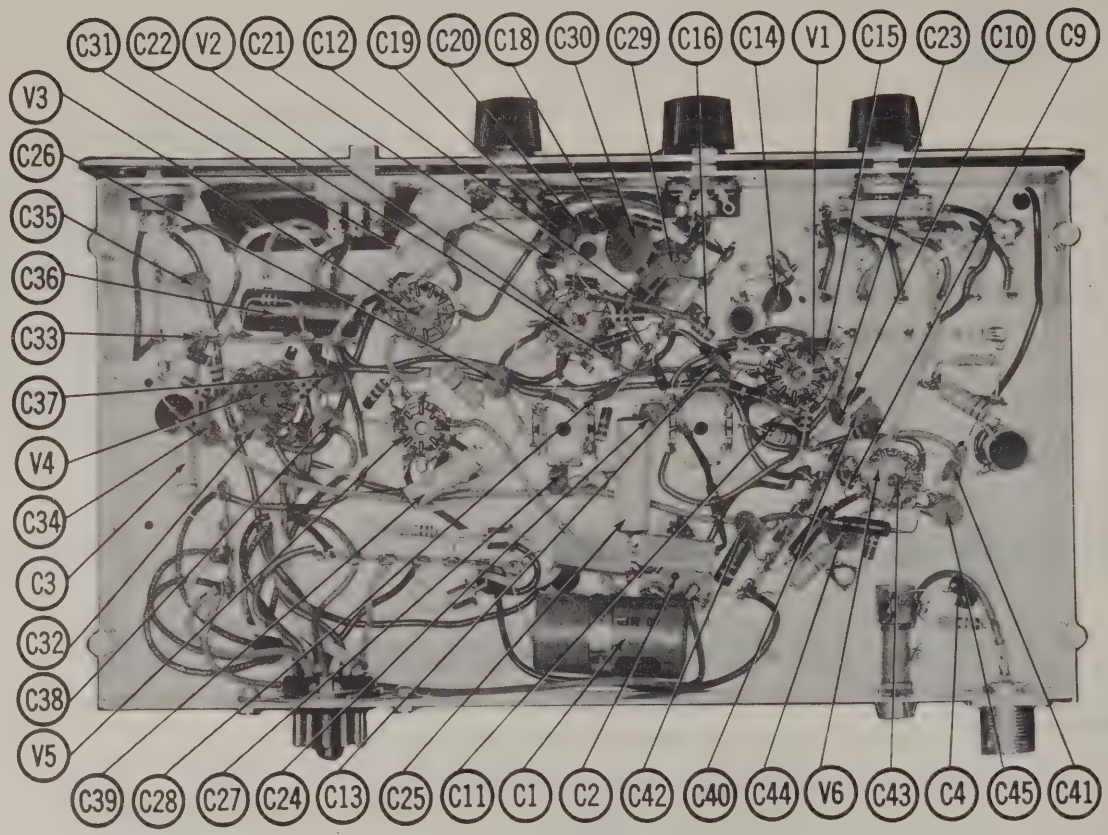
Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95)

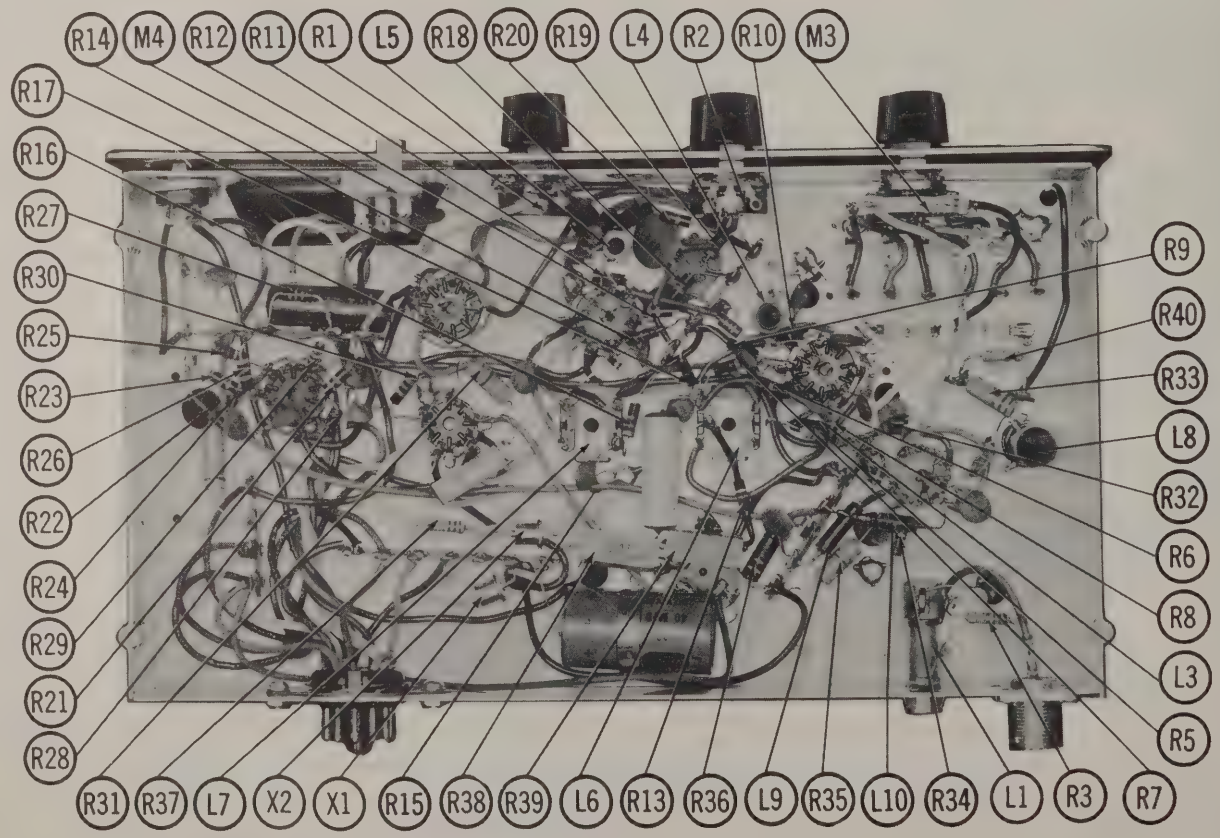
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

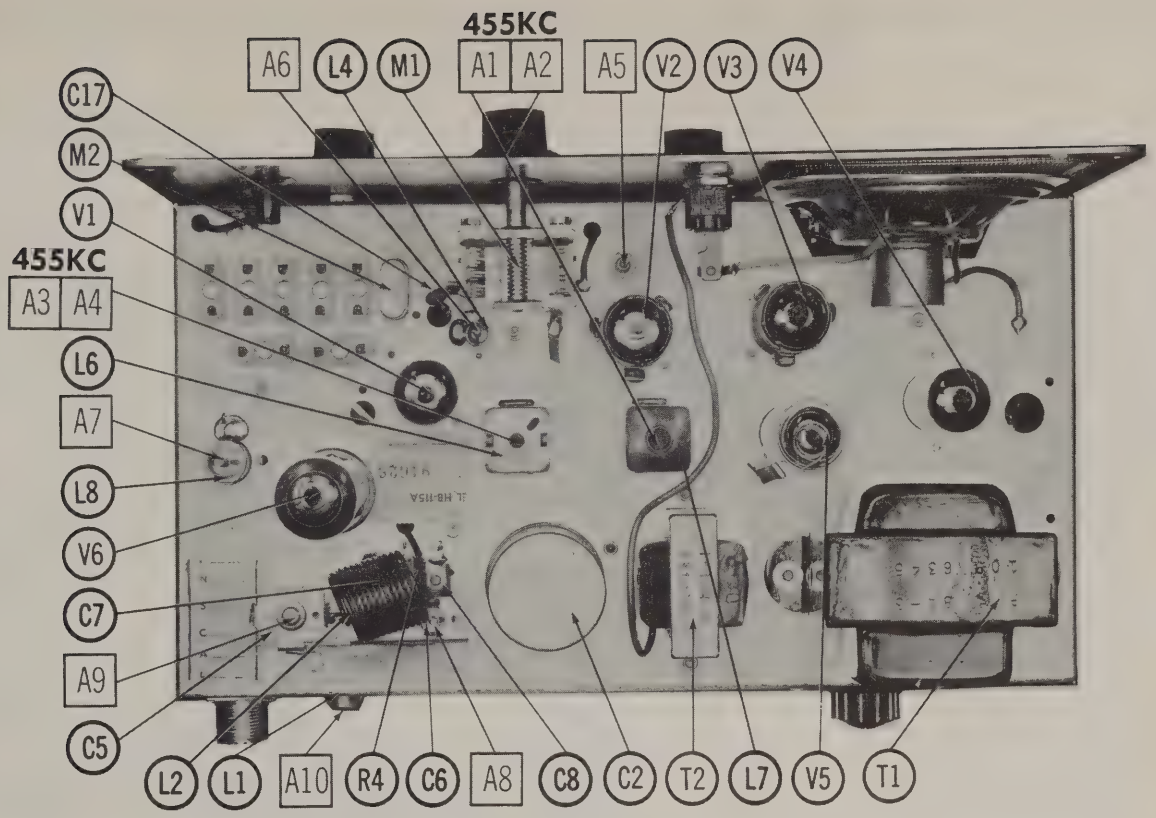
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.
Connect either a 50Ω dummy load or the normally used antenna system. Set Channel Selector to the usable channel nearest channel 11 (27.085MC).

INDICATOR	ADJUST	REMARKS
Field strength meter or #47 pilot light dummy load.	A7	Key Transmitter. Adjust for maximum indication. Key transmitter a few times and readjust A7, if necessary so that oscillator starts each time.
"	A8, A9	Key transmitter. Adjust for maximum indication.
Television receiver tuned to channel 2.	A10	Key transmitter. Adjust for MINIMUM interference on TV screen.

© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY559


C31
C22
V2
C21
C12
C19
C20
C18
C30
C29
C16
C14
V1
C15
C23
C10
C9
V3
C26
C35
C36
C33
C37
V4
C34
C3
C32
C38
V5
C39
C28
C27
C24
C13
C25
C11
C1
C2
C42
C40
C44
V6
C43
C4
C45
C41


R14
M4
R12
R11
R1
L5
R18
R20
R19
L4
R2
R10
M3
R17
R16
R27
R30
R25
R23
R26
R22
R24
R29
R21
R28
R9
R40
R33
L8
R32
R6
R8
L3
R5
R31
R37
L7
X2
X1
R15
R38
R39
L6
R13
R36
L9
R35
L10
R34
L1
R3
R7



PARTS LIST AND DESCRIPTION

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)

TUBES

◆ AMPEREX ◆ . GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆						
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE
V1	RF Amp. -Mixer	6EA8 (6U8A)*		V4	AF Amp. -Speech Amp.	ECC83/ 12AX7
V2	Rec. Osc. -IF Amp.	6EA8 (6U8A)*		V5	Output - Modulator	6AQ5A
V3	Det. -AVC-Noise Limiter	6BJ7		V6	Transmit Osc. -Final	6AW8A

* Alternate

POWER RECTIFIERS

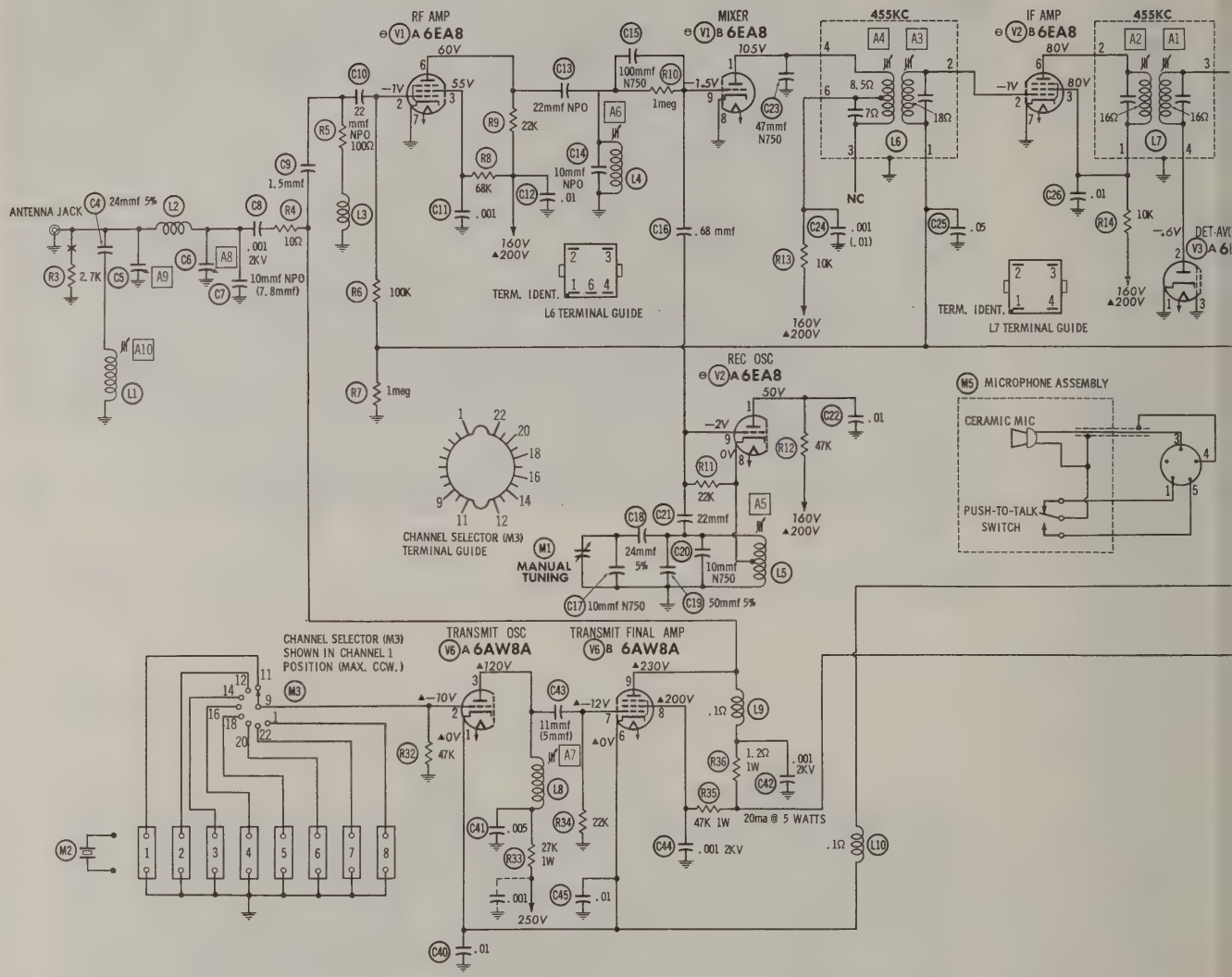
ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.085A	SR-889	1N2070) or VB400	1N1763 or 1N3194	40H or F4
X2	.085A	SR-889	1N2070)	1N1763 or 1N3194	40H or F4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Lafayette PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	40	200	E-238-1	PRS1580	BR4025	QT1-14	TD-40-250	TC58	TVA-1511
C2A	▲40	200	E-237-1	AFH-04-70	DD0471	XC4-22	TMT-3700	FP-425	TVLS-4624.5*
B	▲40	350	)				TD-40-350		
C	■40	350	)						
D	10	50	)						
C3	25	30		CRE762A	NLW25-50	MT1-14	MLV25-50	TT50X25	TE-1306

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

(CONTINUED ON PAGE 94)



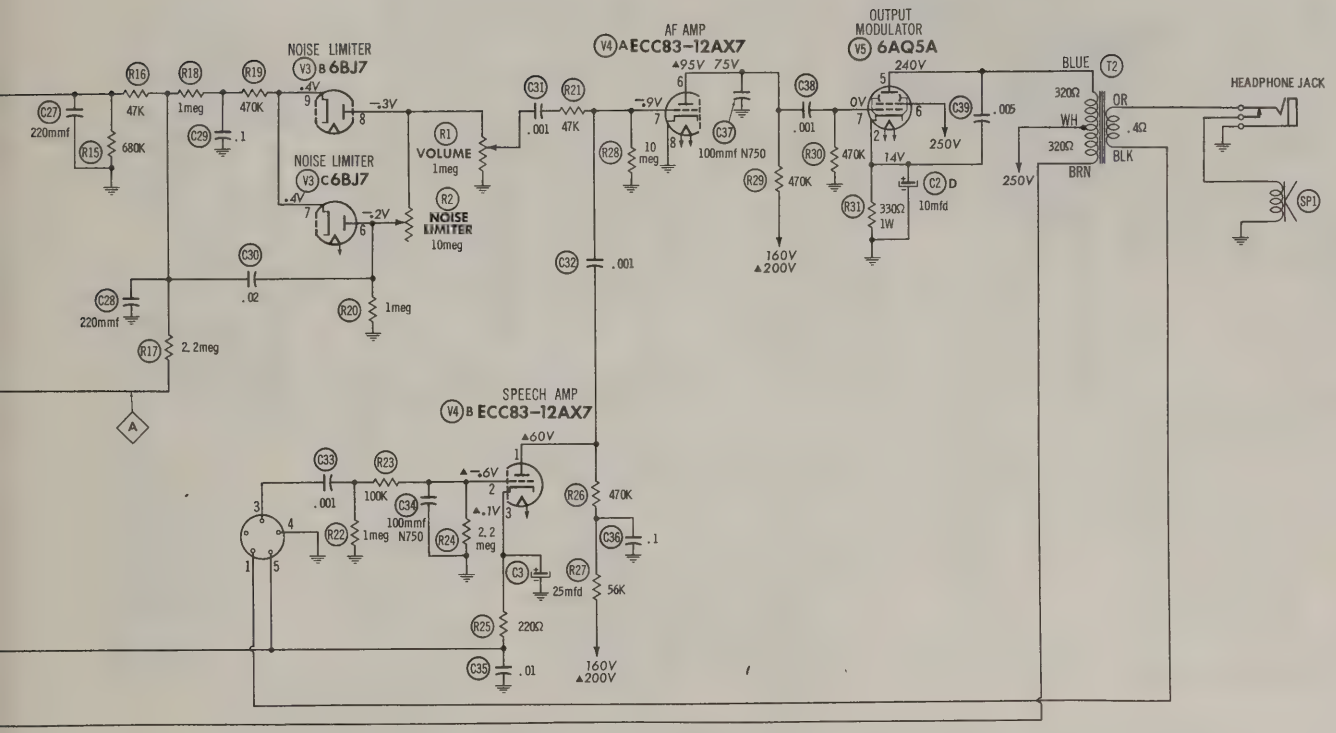
RESISTANCE MEASUREMENTS

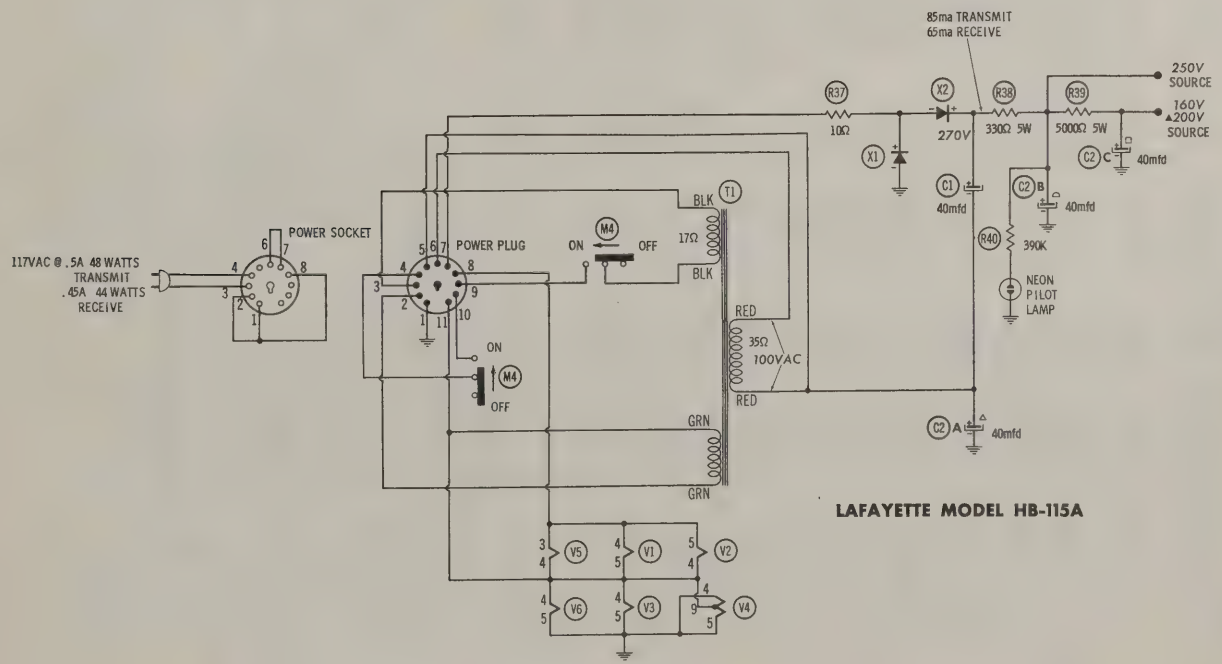
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6EA8	†15K	1meg	†73K	FIL	FIL	†27K	0Ω	0Ω	1meg
V2	6EA8	†52K	800K	†15K	FIL	FIL	†15K	0Ω	0Ω	22K
V3	6BJ7	0Ω	600K	0Ω	FIL	FIL	900K	2.2meg	900K	2.2meg
V4	ECC83 12AX7	†530K	800K	▲220Ω	FIL	FIL	†470K	10meg	0Ω	FIL
V5	6AQ5A	NC	330Ω	FIL	FIL	†650Ω	†330Ω	470K		
V6	6AW8A	▲.1Ω	47K	†27K	FIL	FIL	▲.1Ω	22K	†47K	†650Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN TRANSMIT POSITION.
† MEASURED FROM OUTPUT OF X2.
NC NO CONNECTION.

⊖ See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964





LAFAYETTE MODEL HB-115A

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	24 5%		1469-000024	TCZ-24	22R5Q24	CM-19B-240J	CNO425	MS-424
C5								
C6								
C7	10 NPO	(7.8) †	NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO410	10TCC-Q10
C8	.001 2KV							
C9	1.5		NPO-SI 1.5	TCZ-1R5	C10V15C		CNO515	10TCC-V15
C10	22 NPO			DTZ-22	C10Q22C		CNO422	10TCC-Q22
C11	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C12	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C13	22 NPO			DTZ-22	C10Q22C		CNO422	10TCC-Q22
C14	10 NPO		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO410	10TCC-Q10
C15	100 N750			TCN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C16	.68							
C17	10 N750			DTN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C18	24 5%		1469-000024	TCZ-24	22R5Q24	CM-19B-240J	CNO425	MS-424
C19	50 5%							
C20	10 N750			DTN-10	C10Q1U	CCTN-100	CN7410	10TCU-Q10
C21	22		DI-22	DD-220	LA10Q22-SL	CCD-220	GP422	5GA-Q22
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C23	47 N750			TCN-47	C10Q47U	CCTN-470	CN7447	10TCU-Q47
C24	.001	(.01) †	BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C25	.05		P688N-047	DD-503	PM6S47	6DP-3-473	GEM-6147	6TM-S47
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C27	220		DI-220	DD-221	LA10T22-S3	CCD-221	GP322	10TS-T22
C28	220		DI-220	DD-221	LA10T22-S3	CCD-221	GP322	10TS-T22
C29	.1 50V							
C30	.02 50V		TTD-02	CK-303	H3		TA120	TG-S20
C31	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C32	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C33	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C34	100 N750			TCN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C35	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C36	.1		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C37	100 N750			TCN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C38	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C39	.005		V161-0047	CPR-5000J	WMF4D47	CDP-1-502	PVC4247	4EP-D50
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C41	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C42	.001 2KV							
C43	11	(5mmf)†	DI-12	DD-120	LA10Q12-SL	CCD-120	GP412	5GA-Q12
C44	.001 2KV							
C45	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

† Alternate Value.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Lafayette PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume	1meg	V-329-6	F2-1meg, SU204, AK-31 or (B-70)	A47-1meg-Z, FS-3	QCB1①, B13-137, TM5, or (BU2, CF26, SS14, DC1)*	UA16A, SF1000, or (RU16A, SL38, SF1000) or (U53)
R2	Noise Limiter	10meg	V-330-6	F1-10meg, SU204, AK-31, or (B-98)	A47-10meg-S, FS-3	QCB1①, B11-143, TM5, or (BU2, CF70, SS14, DC1)*	UA17L, SF1000 or (U-82)

① Used instead of TM Plate in TM5.
* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R38	330Ω 5W	MR3	5W-SQ-350	#W328-2	R39	5000Ω 5W	PW5-5000	5W-SQ-5000	#W328-4

Lafayette Part Number.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Lafayette PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	54MC TV Trap	C191-2					
L2	Antenna	C-194					
L3	RF Choke (2.2uh)	1104-C	BC-563	74F226AP	RTC-8517	T988	
L4	Mixer Grid	C-180-2					
L5	Rec. Osc.	O-189-5					
L6	1st IF	1-110-4					
L7	2nd IF	1-110-1	BC353	12-C31	RTC-8633	T608	
L8	Transmit Osc.	C-190B-1					
L9	RF Choke (4.7uh)	1104-C	SW-631	74F476AP		TA816	
L10	RF Choke (3.3uh)	1104-C	BC-504	74F336AP	RTC-8518	TA815	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	Lafayette PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .5A	100VAC @ .280A (AC)	6.3VAC @ 3A	PT178A-3					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Lafayette PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	10K CT	4Ω	T184-8	A-2938	A-3856	24S93	S-51X	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Lafayette PART No.	QUAM PART No.	
SP1	3 1/2" PM 3-4Ω	S-719-1	3A05	

MISCELLANEOUS

ITEM No.	PART NAME	Lafayette PART No.	NOTES
M1	Tuning Cap.	V2358-7	
M2	Transmit Crystal		3rd Overtone Type (Specify Channel when Ordering)
M3	Switch	RS-849-7	Channel Selector
M4	Switch	8019A-16	On-Off, SPST Slide)
M5	Microphone Ass'y.	M895-1	Includes Push-to-talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Knob - Tuning (Inner)	K403-3
Knob - Tuning Indicator (Outer)	K4004-6
Knob - Volume, Noise Limiter & Channel Selector	K4036A

ITEM	PART No.
Front Panel	FP-9208F
Speaker Grille	SG-9213
Cabinet	C9212

TRADE NAME:	Lafayette Model HB-222
SUPPLIER:	For Current Address, see Master Index
TYPE SET:	10 Tube, 2 Transistor Transceiver
POWER SUPPLY:	110 — 120 Volts AC, 60 Cycles (or) 12 Volt Storage Battery
RATING:	77 Watts, .68 Amp. @ 117VAC (Trans.) 67 Watts, .60 Amp. @ 117VAC (Rec.) 5.4 Amp. @ 12.6 VDC (Trans.) 4.8 Amp. @ 12.6 VDC (Rec.)
TUNING RANGE:	Any CB Channels 1 thru 23

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A4, A15.....GENERAL CEMENT #5907, 8607, 8727
WALSCO #2515
A5 thru A13.....GENERAL CEMENT #8606, 9295, 8282
WALSCO #2526, 2543, 2544
A14.....GENERAL CEMENT #8196, 8722, 8272
WALSCO #2515, 2516, 2518

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage, to point Ⓐ or use front panel "S" meter.
Calibrate signal generator to the necessary channel frequencies by zero beating with another CB transceiver.
Keep output of signal generator at the lowest level consistent with a clear indication on the VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 7 of V4 (2nd Mixer), low side to chassis (262KC Unmod.)	Any	A1, A2, A3, A4	Adjust for maximum indication.
High side thru .1mfd to pin 6 of V2 (1st Mixer), low side to chassis (1750KC Unmod.)	11 (27.085MC)	A5, A6, A7	Adjust for maximum indication.
High side to antenna jack, low side to chassis. (27.085MC Unmod.)	11 (27.085MC)	A8, A9, A10	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

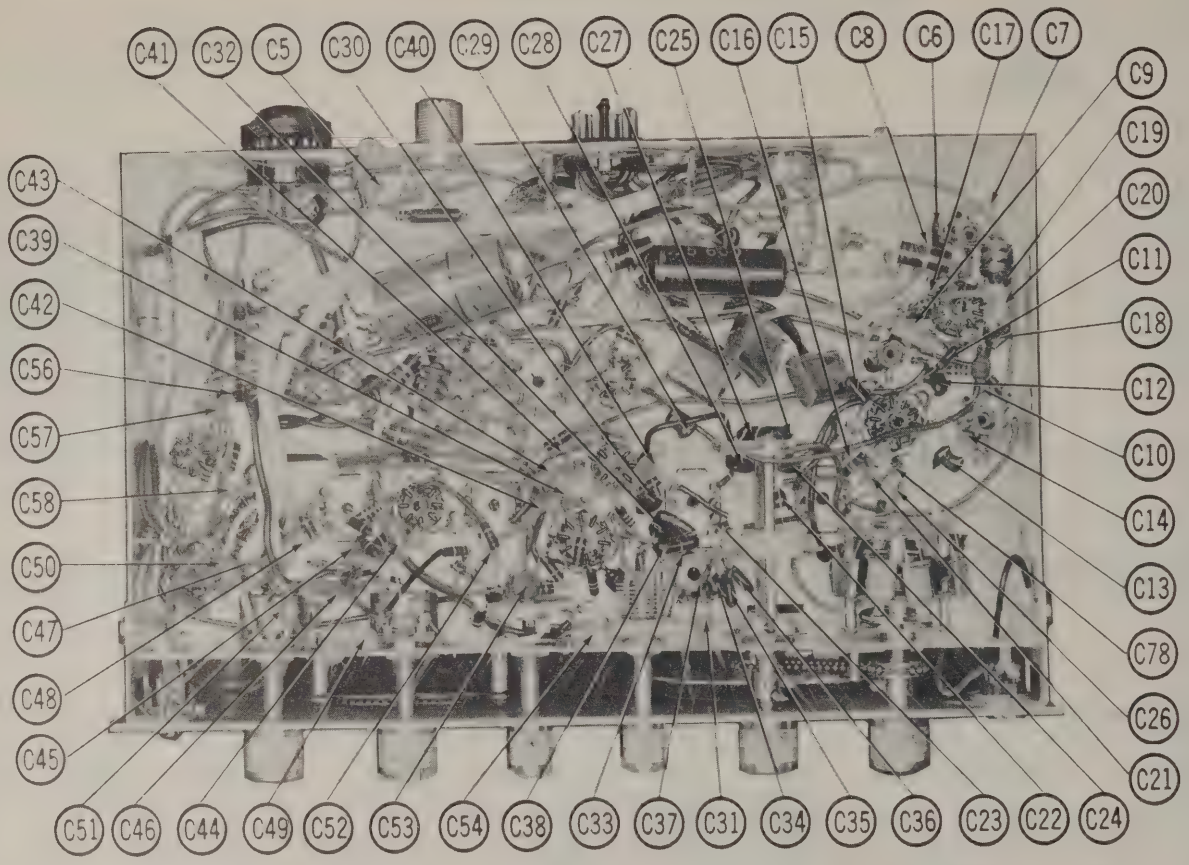
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

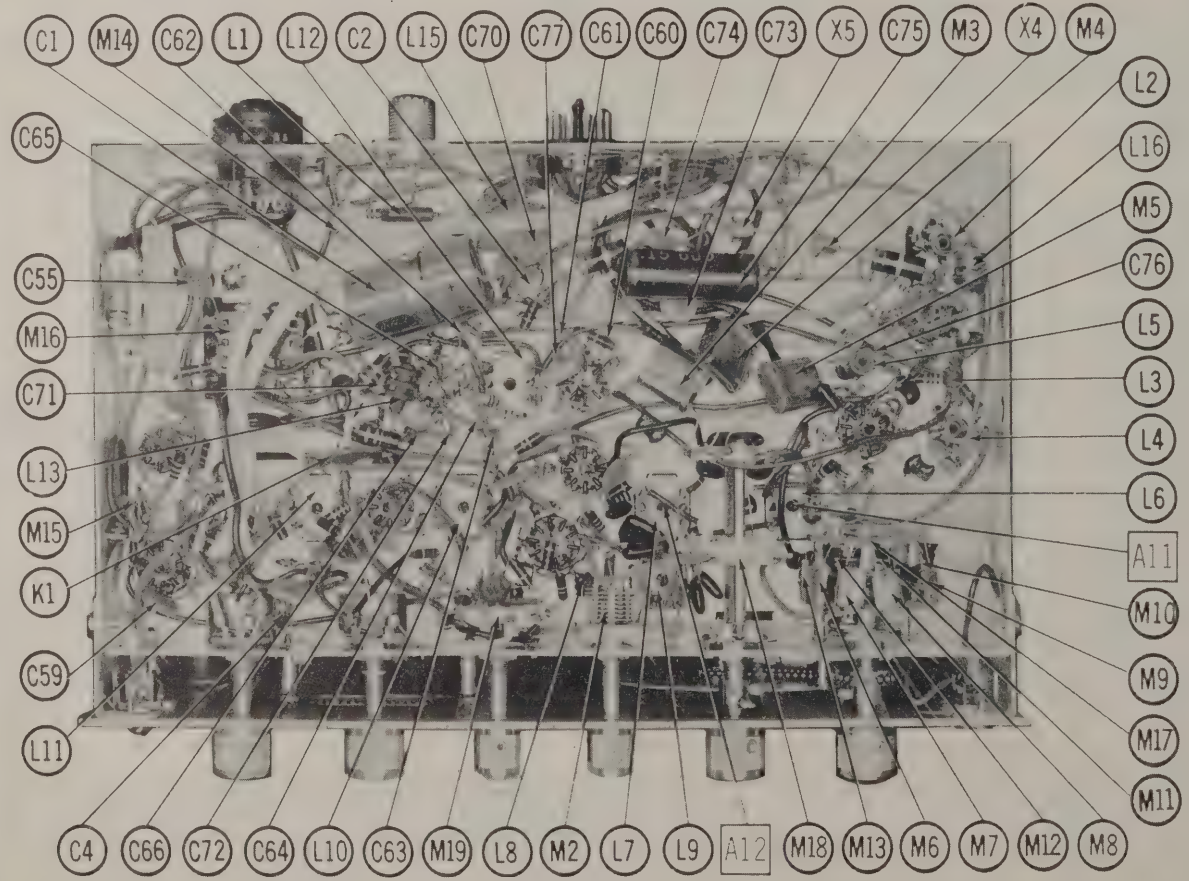
Use either 50Ω dummy load or the normally used antenna system. Set Channel and Dial Selector for Channel 11 (27.085MC).

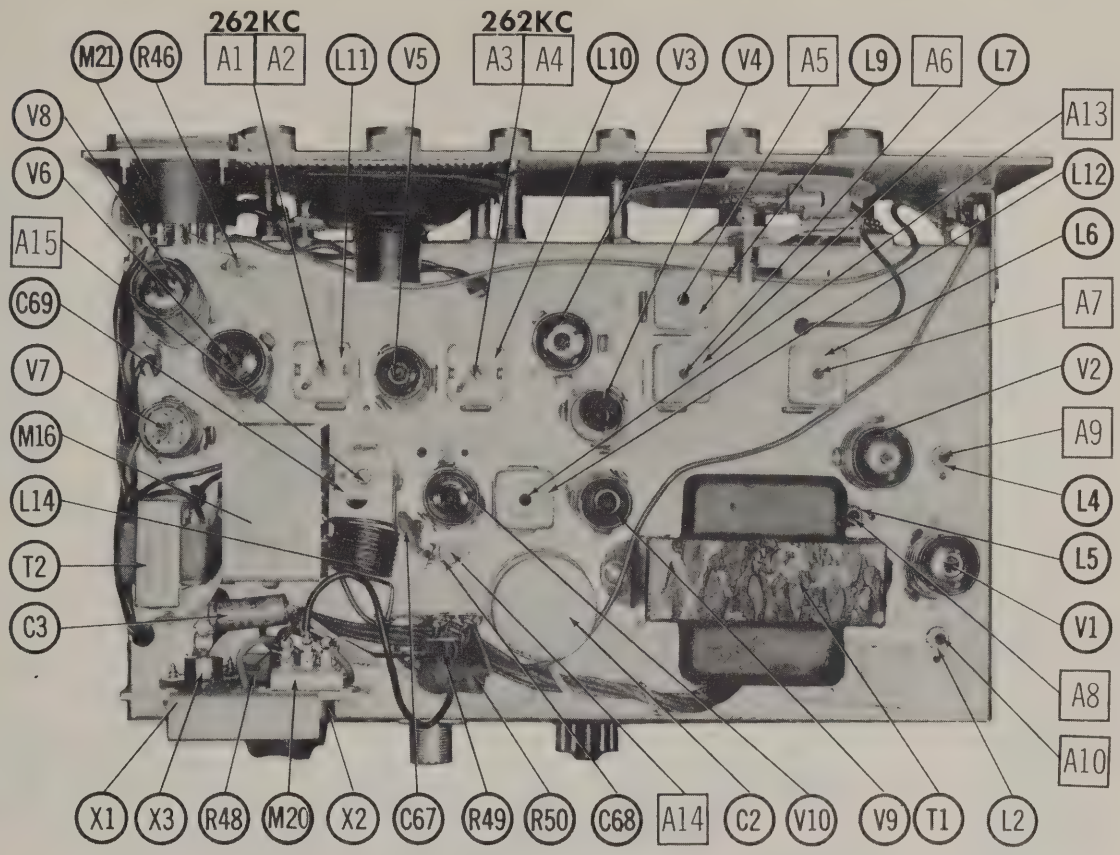
INDICATOR	ADJUST	REMARKS
Field strength meter or front panel meter in "PRF" position.	A11, A12, A13, A14, A15	Key transmitter. Adjust for maximum indication. Adjust A15 so that the DC voltage measured across R45 does not exceed .025 volts.

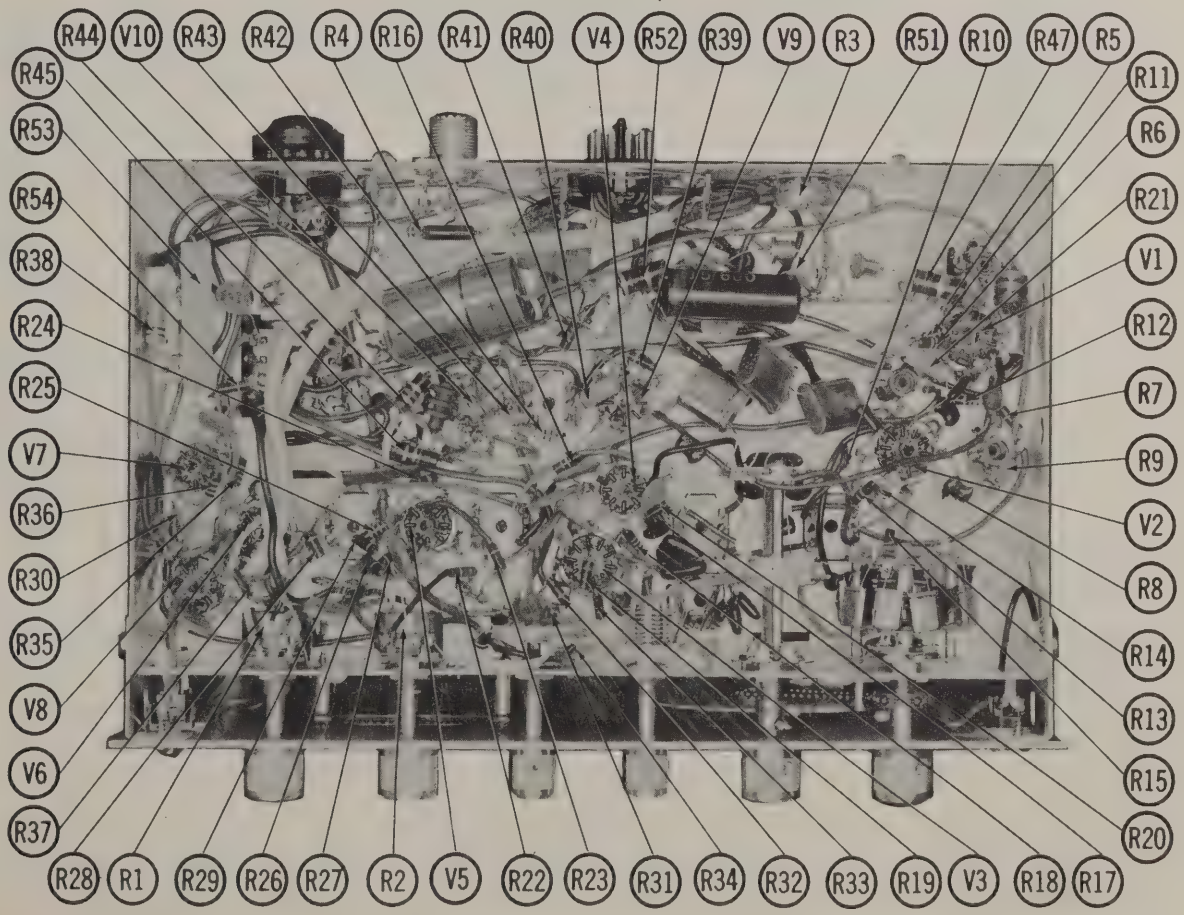
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

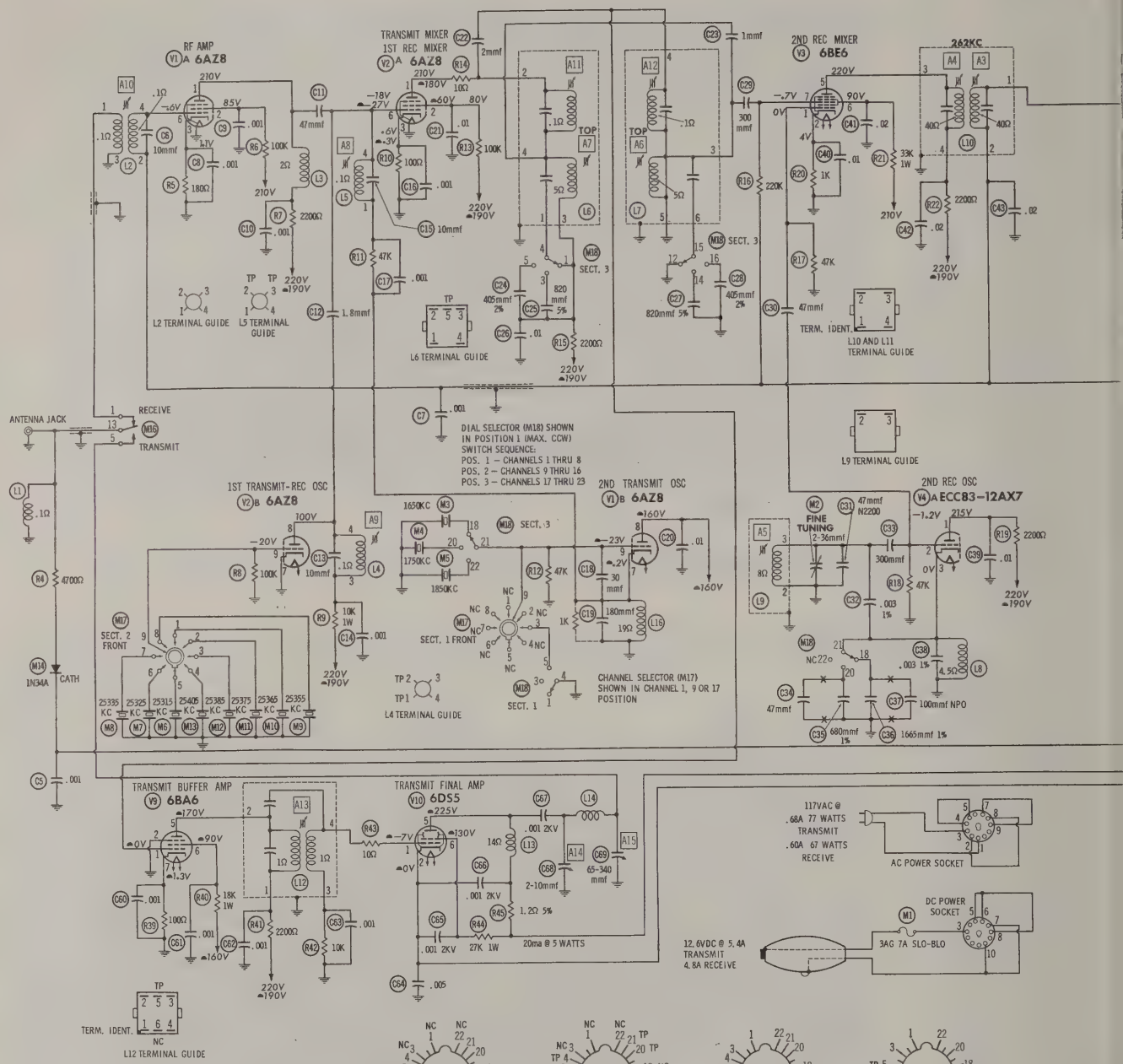
© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY560


C41
C32
C5
C30
C40
C29
C28
C27
C25
C16
C15
C8
C6
C17
C7
C9
C19
C20
C11
C18
C12
C10
C14
C13
C78
C26
C21
C43
C39
C42
C56
C57
C58
C50
C47
C48
C45
C51
C46
C44
C49
C52
C53
C54
C38
C33
C37
C31
C34
C35
C36
C23
C22
C24


C1
M14
C62
L1
L12
C2
L15
C70
C77
C61
C60
C74
C73
X5
C75
M3
X4
M4
L2
L16
M5
C76
L5
L3
L4
L6
A11
M10
M9
M17
M11
C65
C55
M16
C71
L13
M15
K1
C59
L11
C4
C66
C72
C64
L10
C63
M19
L8
M2
L7
L9
A12
M18
M13
M6
M7
M12
M8


262KC
262KC
M21
R46
A1
A2
L11
V5
A3
A4
L10
V3
V4
A5
L9
A6
L7
V8
V6
A15
C69
V7
M16
L14
T2
C3
A13
L12
L6
A7
V2
A9
L4
L5
V1
A8
A10
X1
X3
R48
M20
X2
C67
R49
R50
C68
A14
C2
V10
V9
T1
L2


R44
V10
R43
R42
R4
R16
R41
R40
V4
R52
R39
V9
R3
R51
R10
R47
R5
R45
R53
R54
R38
R24
R25
V7
R36
R30
R35
V8
V6
R37
R11
R6
R21
V1
R12
R7
R9
V2
R8
R14
R13
R15
R20
R28
R1
R29
R26
R27
R2
V5
R22
R23
R31
R34
R32
R33
R19
V3
R18
R17

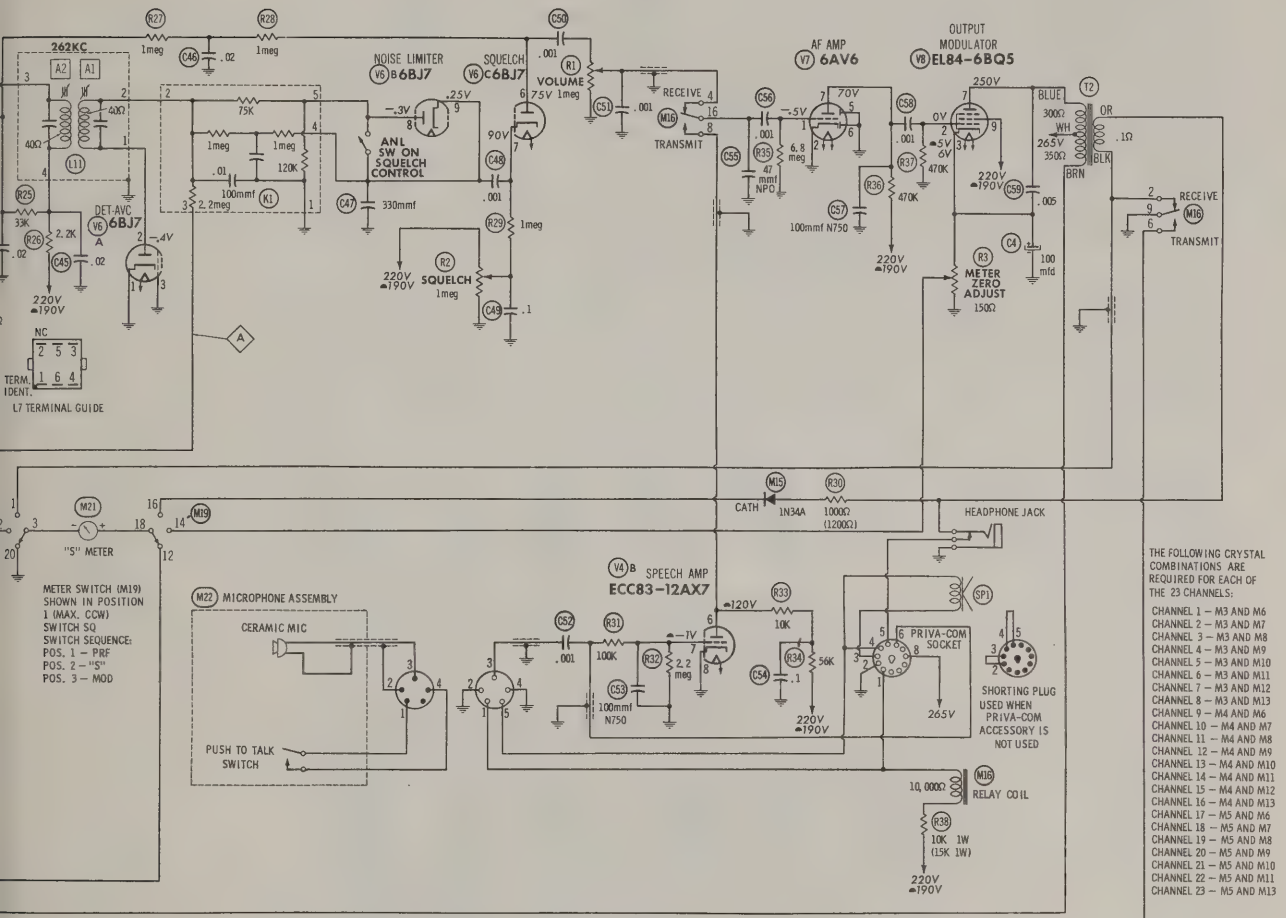

RF AMP V1A 6AZ8
TRANSMIT MIXER 1ST REC MIXER V2A 6AZ8
2ND REC MIXER V3 6BE6
262KC
ANTENNA JACK
RECEIVE
TRANSMIT
DIAL SELECTOR (M18) SHOWN IN POSITION 1 (MAX. CCW)
SWITCH SEQUENCE:
POS. 1 – CHANNELS 1 THRU 8
POS. 2 – CHANNELS 9 THRU 16
POS. 3 – CHANNELS 17 THRU 23
1ST TRANSMIT-REC OSC V2B 6AZ8
2ND TRANSMIT OSC V1B 6AZ8
2ND REC OSC V4A ECC83-12AX7
FINE TUNING 2-36mmf
CHANNEL SELECTOR (M17) SHOWN IN CHANNEL 1, 9 OR 17 POSITION
TRANSMIT BUFFER AMP V9 6BA6
TRANSMIT FINAL AMP V10 6DS5
117VAC @ .68A 77 WATTS TRANSMIT .60A 67 WATTS RECEIVE
AC POWER SOCKET
DC POWER SOCKET
12.6VDC @ 5.4A TRANSMIT 4.8A RECEIVE
3AG 7A SLO-BLO
L2 TERMINAL GUIDE
L5 TERMINAL GUIDE
L6 TERMINAL GUIDE
L10 AND L11 TERMINAL GUIDE
L9 TERMINAL GUIDE
L4 TERMINAL GUIDE
L12 TERMINAL GUIDE
TERM. IDENT.
DIAL SELECTOR (M18) SECT. 1 TERMINAL GUIDE
DIAL SELECTOR (M18) SECT. 2 TERMINAL GUIDE (NOT USED)
DIAL SELECTOR (M18) SECT. 3 TERMINAL GUIDE
METER SWITCH (M19) TERMINAL GUIDE

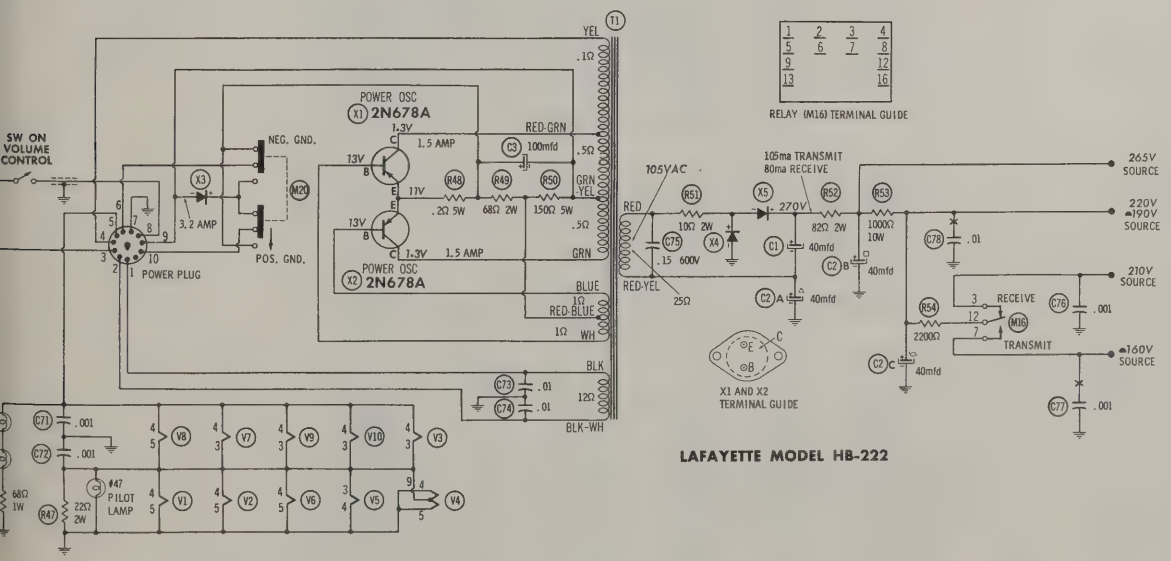
SEE PAGE 102 FOR RESISTANCE CHART

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN TRANSMIT POSITION

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964


262KC
NOISE LIMITER V5 6BJ7
SQUELCH V6 6C6BJ7
VOLUME 75V 1meg
AF AMP V7 6AV6
OUTPUT MODULATOR V8 EL84-6BQ5
ANL SW ON SQUELCH CONTROL
DET-AVC V6 6BJ7 A
SQUELCH 1meg
RECEIVE
TRANSMIT
METER ZERO ADJUST 150Ω
L7 TERMINAL GUIDE
"S" METER
METER SWITCH (M19) SHOWN IN POSITION 1 (MAX. CCW)
SWITCH SQ
SWITCH SEQUENCE:
POS. 1 — PRF
POS. 2 — "S"
POS. 3 — MOD
M22 MICROPHONE ASSEMBLY
CERAMIC MIC
PUSH TO TALK SWITCH
V4B SPEECH AMP ECC83-12AX7
CATH
1N34A
1000Ω (1200Ω)
HEADPHONE JACK
6 PRIVA-COM SOCKET
SHORTING PLUG USED WHEN PRIVA-COM ACCESSORY IS NOT USED
10,000Ω
RELAY COIL
10K 1W (15K 1W)
THE FOLLOWING CRYSTAL COMBINATIONS ARE REQUIRED FOR EACH OF THE 23 CHANNELS:
CHANNEL 1 — M3 AND M6
CHANNEL 2 — M3 AND M7
CHANNEL 3 — M3 AND M8
CHANNEL 4 — M3 AND M9
CHANNEL 5 — M3 AND M10
CHANNEL 6 — M3 AND M11
CHANNEL 7 — M3 AND M12
CHANNEL 8 — M3 AND M13
CHANNEL 9 — M4 AND M6
CHANNEL 10 — M4 AND M7
CHANNEL 11 — M4 AND M8
CHANNEL 12 — M4 AND M9
CHANNEL 13 — M4 AND M10
CHANNEL 14 — M4 AND M11
CHANNEL 15 — M4 AND M12
CHANNEL 16 — M4 AND M13
CHANNEL 17 — M5 AND M6
CHANNEL 18 — M5 AND M7
CHANNEL 19 — M5 AND M8
CHANNEL 20 — M5 AND M9
CHANNEL 21 — M5 AND M10
CHANNEL 22 — M5 AND M11
CHANNEL 23 — M5 AND M13



LAFAYETTE MODEL HB-222

PARTS LIST AND DESCRIPTION

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Rec. RF Amp. - 2nd Transmit Osc.	6AZ8	V5	IF Amp.	6BA6
V2	1st Rec. Mixer-Transmit Mixer-1st Transmit-Receive Osc.	6AZ8	V6	Det. -AVC-Noise Limiter-Squelch	6BJ7
V3	2nd Rec. Mixer	6BE6	V7	AM Amp.	6AV6
V4	2nd Rec. Osc. - Speech Amp.	ECC83/12AX7	V8	Output-Modulator	EL84/6BA5
			V9	Transmit Buffer	6BA6
			V10	Transmit Final	6DS5

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2N678A	Power Oscillator	DS503			
X2	2N678A	Power Oscillator	DS503			

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X3	3.2A		1N3208	40208	ST310P
X4	115MA	SR846-3	1N539 or VB300	1N2861 or 1N3194	30H or F4
X5	115MA	SR846-3	1N539	1N2861 or 1N3194	30H or F4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Lafayette PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	40	200	E238-1	PRS1580	BR4025	QT1-14	TD-40-250	TC58	TVA-1511
C2A	▲40	200	E237-4	AFH4-04-70	DD0471	XC4-22	TMT3700	FP425	TVLS-4625.5*
B	■40	350					TD-40-350		
C	●40	350							
C3	100	25		CRE623A	NLW100-25	MT1-20	MLV100-25	TT25X100	TE-1211
C4	100	25		CRE623A	NLW100-25	MT1-20	MLV100-25	TT25X100	TE-1211

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C6	10		ADM15-100	TCZ-10	CD10C100J	DM-10-100K	MCB215	MS-41
C7	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C8	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C9	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C10	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C11	47		ADM-15-470	TCZ-47	CD10E470J	DM-10-470K	MCB224	MS-447
C12	1.8							
C13	10		ADM-15-100	TCZ-10	CD10C100J	DM-10-100K	MCB215	MS-41
C14	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C15	10		ADM-15-100	TCZ-10	CD10C100J	DM-10-100K	MCB215	MS-41
C16	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C17	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C18	30		ADM-15-300	TCZ-30	CD10E300J	DM-10-300K		MS-43
C19	180		ADM-15-181	TCZ-180	CD10F181J	DM-10-181K		MS-318
C20	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C21	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C22	2			TCZ-2R2	CD10C020M	DM-10-020		
C23	1			TCZ-1		DM-10-010		
C24	405 2%							
C25	820 5%		ADM-19-821		CD19F821J	DM-15-821J		MS-382
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C27	820 5%		ADM-19-821		CD19F821J	DM-15-821J		MS-382
C28	405 2%							
C29	300		ADM-15301	TCZ-300	CD15F301J	DM-10-301K	MCB241	MS-33
C30	47		ADM-15-470	TCZ-47	CD10E470J	DM-10-470K	MCB224	MS-447
C31	47 N2200							
C32	.003 1%					DM-19-302F		
C33	300		ADM-15-301	TCZ-300	CD15F301J	DM-10-301K	MCB241	MS-33
C34	47	Note 1	ADM-15-470	TCZ-47	CD10E470J	DM-10-470K	MCB224	MS-447
C35	680 1%					DM-15-681F		
C36	1665 1%							
C37	100 NPO	Note 1	NPO-DI 100	DTZ-100	C10T1C	CCTO-101	CNO310	10TCC-T10
C38	.003 1%					DM-19-302F		
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C41	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C42	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C43	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C44	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C45	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C46	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C47	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C48	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C49	.1 400V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C50	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C51	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C52	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C53	100 N750		N750-DI 100	DTN-100	C10T1U	CCTN-121	CN7310	10TCU-T10
C54	.1 400V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C55	47 NPO		NPO-DI 47	DTZ-47	C10Q47C	CCTO-470	CNO447	10TCC-Q47
C56	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C57	100 N750		N750-DI 100	DTN-100	C10T1U	CCTN-121	CN7310	10TCU-T10
C58	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C59	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C60	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C61	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C62	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C63	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C64	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C65	.001 2KV		HVD-30	DD30-102	HVB20D1	3CCD-102	2HV210	BL-D10
C66	.001 2KV		HVD-30	DD30-102	HVB20D1	3CCD-102	2HV210	BL-D10
C67	.001 2KV		HVD-30	DD30-102	HVB20D1	3CCD-102	2HV210	BL-D10
C68	2-10							
C69	65-340					46W-465		
C70	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C71	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C72	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C73	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-D10
C74	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-D10
C75	.15 600V		V161-.15		DPMS6P15	6CP-5-154	PVC6015	6PS-P15
C76	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C77	.001	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C78	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

Note 1. Not used in some versions.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Lafayette PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS–IRC PART No.	MALLORY PART No.
R1	Volume, Power Switch	1meg	V344-2	F2-1meg, SU204, KR-1 or (B-70-S)	A47-1meg-Z, RS-3, SWE-12	Q13-137, 76-1 or (BU2, CF26, SS5, GC)*	UA16A, SL2500, US41 or(RU16A, SL38, SL2500, US41) or (U53, US26)
R2	Squelch, ANL Switch	1meg	V345-2	F1-1meg, SU204, KR-1 or (B-69, KR-1)	A47-1meg-S, RS-3, SWE-12	Q11-137, 76-1 or (BU2, CF17, SS5, GC)*	UA16L, SL2500, US41 or (RU16L, SL38, SL2500, US41) or (U54, US26)
R3	"S" Meter Zero	150Ω 2W	P325-4	V-150①	A43-250, FKS-1/4	WPS150X75	

* "SNAPTROL"

① Use Case as Center Terminal and Insulate Case from Chassis.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R48	.2Ω 5W		WT22	#W328-22	R53	1000Ω 10W	PW10-1000	10W-SQ-1000	#W328-24
R50	150Ω 5W	PW5-150	5W-SQ-150	#W328-19					

Lafayette Part Number.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Lafayette PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (5.5uh)			4609	RTC-8519	T820	
L2	Antenna	C1039-1					
L3	RF Choke (25uh)			72F275AP		T396	
L4	1st Xtal. Osc.	C1038-1		4203			
L5	1st Mixer Grid	C1037A-1					
L6	1st IF (1750KC)	C1033-1					
L7	2nd IF (1750KC)	C1034-1					
L8	RF Choke (100uh)		TV194	72F104AP	RTC-8527	T305	
L9	2nd Rec. Osc.	C1032-1					
L10	3rd IF (262KC)	1-110-6	BC-319	12-H1	RTC-8638	TA604	
L11	4th IF (262KC)	1-110-6	BC-351	12-H2	RTC-8639	TA605	
L12	Transmit	C1035-1					
L13	RF Choke (500uh)	C185-12	TV-188	6174	RTC-8592	T324	
L14	Transmit Tank (10 Turns)	C194					
L15	Hash Choke (50uh)	C-187-1					
L16	Cath Choke (520uh)		TV204	6144	RTC-8581	TA310	

TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA					NOTES
	PRI. 1	SEC. 1	Lafayette PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .68A	105VAC @ .360A AC	PT1042-2					
	PRI. 2	SEC. 2						
	12VDC Input @ 3.2A	12.6VAC @ 2.2A						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Lafayette PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	17K Tap @ 6000Ω	3-4Ω	T1046-1					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Lafayette PART No.	QUAM PART No.	
SP1	3" PM 3-4Ω	S724	30A05	

PARTS LIST AND DESCRIPTION (CONTINUED)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Lafayette PART NO.	REPLACEMENT DATA
K1	Det.-AVC-Noise Limiter Network	1meg, 1meg, 75K, 120K, 2.2meg, 100mmf, .01mfd	C263A-1	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Lafayette PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG S/B	7 Amp/ 32V			313007.	155020	MDX 7	HHJ

MISCELLANEOUS

ITEM No.	PART NAME	Lafayette PART No.	NOTES
M2	Tuning Capacitor	C250B-3	2-36mmf
M3	Crystal	C8000	Transmit *
M4	Crystal	C8000	Transmit *
M5	Crystal	C8000	Transmit *
M6	Crystal	C8001	Transmit-Receive *
M7	Crystal	C8001	Transmit-Receive*
M8	Crystal	C8001	Transmit-Receive *
M9	Crystal	C8001	Transmit-Receive *
M10	Crystal	C8001	Transmit-Receive *
M11	Crystal	C8001	Transmit-Receive *
M12	Crystal	C8001	Transmit-Receive *
M13	Crystal	C8001	Transmit-Receive *
M14	Diode		Meter Rectifier (1N34A)
M15	Diode		Meter Rectifier (1N34A)
M16	Relay	R725-1	Transmit-Receive (4PDT 10K Imp.)
M17	Switch	C893-3	Channel Selector (8-Position 2-section Wafer)
M18	Switch	C894-3	Dial Selector (Band) (3-Position 3-Section Enclosed)
M19	Switch	BS8002-1	Meter (3-Position Single Section Enclosed)
M20	Switch		Polarity Selector (DPDT Slide)
M21	"S" Meter	M8003	1MA. Includes Lamps
M22	Microphone Ass'y.	M868	Includes Push-to-talk Switch

* Specify Crystal Freq. when ordering.

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Knob - Channel Selector, Volume, Squelch, Band Switch	K4038-3
Knob - Tuning, Meter Switch	K4037
Dial Scale	DS628A

ITEM	PART No.
Dial Chain	BC9226
Front Panel	FP9232
Cabinet	C9236

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6AZ8	†3300Ω	†100K	180Ω	FIL	FIL	2.4meg	19Ω	†▲3300Ω	47K
V2	6AZ8	†3300Ω	†100K	100Ω	FIL	FIL	47K	0Ω	†11K	100K
V3	ECC83 12AX7	†3300Ω	47K	4.5Ω	FIL	FIL	†67K	2.2meg	0Ω	FIL
V4	6BE6	47K	1000Ω	FIL	FIL	†3300Ω	†36K	2.6meg		
V5	6BA6	2.4meg	0Ω	FIL	FIL	†3300Ω	†36K	68Ω		
V6	6BJ7	0Ω	195K	0Ω	FIL	FIL	†2meg	1.2meg	120K	2.2meg
V7	6AV6	6.8meg	0Ω	FIL	FIL	0Ω	0Ω	†470K		
V8	EL84 6BQ5	NC	470K	150Ω	FIL	FIL	NC	†382Ω	NC	†1100Ω
V9	6BA6	5Ω	0Ω	FIL	FIL	†3300Ω	†▲21K	100Ω		
V10	6DS5	10K	▲0Ω	FIL	FIL	†440Ω	†27K	NC		
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN TRANSMIT POSITION.
† MEASURED FROM OUTPUT OF X5
NC NO CONNECTION

TRADE NAME: Pearce-Simpson Model Companion II

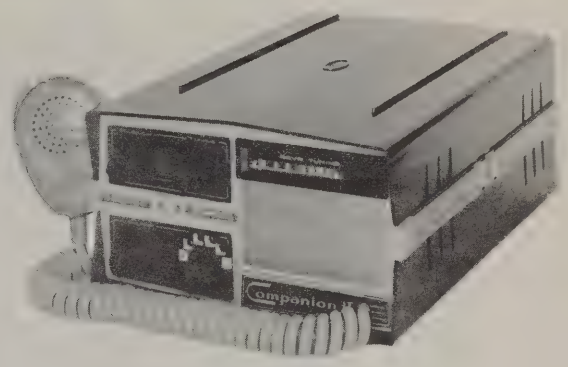
SUPPLIER: For Current Address, see Master Index

TYPE SET: 7 Tube, 3 Transistor Transceiver

POWER SUPPLY: 110 — 120 Volts AC, 60 Cycles (or)
12 Volt Storage Battery

RATING: 72 Watts, .67 Amp. @ 117VAC (Trans.)
52 Watts, .52 Amp. @ 117VAC (Rec.)

TUNING RANGE: TRANS: Any 6 CB Channels 1 thru 23
REC: Any 5 Crystal Controlled CB Channels 1 thru 23 (or)
Continuously Tunable



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:		
	A1 thru A6, A8 thru A12, A14 thru A20....	GENERAL CEMENT #5097, 8727, 5003 WALSCO #2515, 2516, 2518
	A7.....	GENERAL CEMENT #8272, 8276, 9298 WALSCO #2519, 2525, 2541
	A13.....	GENERAL CEMENT #8282, 8606, 9295 WALSCO #2526, 2543, 2544

RECEIVER ALIGNMENT

Connect VTVM, set to read negative voltage to point (A).
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator to the lowest level consistent with a clear indication on the VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 of V2 (Mixer Grid), low side to chassis (455KC Unmod.).	Any	A1, A2, A3, A4, A5, A6	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis (26.965MC Unmod.).	1 (26.965MC)	A7	Set Channel Selector to "EX" position and dial pointer to Channel 1. Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis (27.085MC Unmod.).	11 (27.085MC)	A8, A9, A10, A11, A12	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPART D, SECTION 95.95).

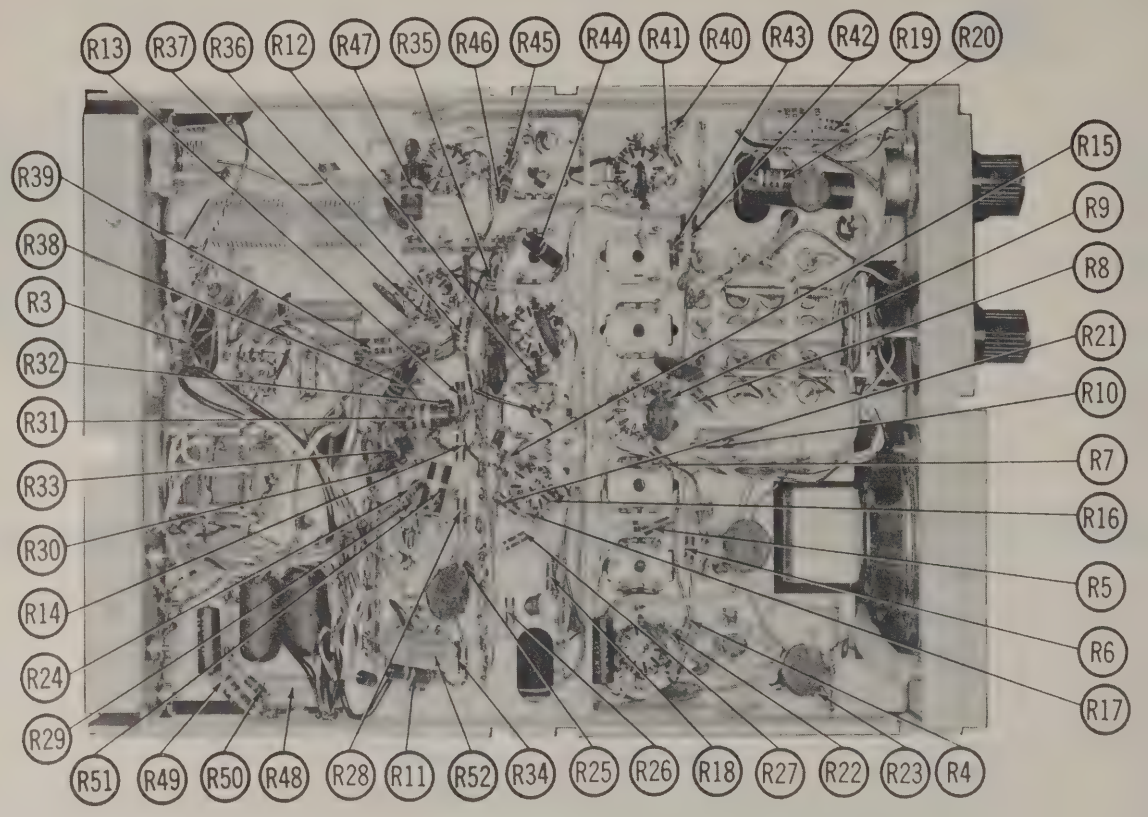
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

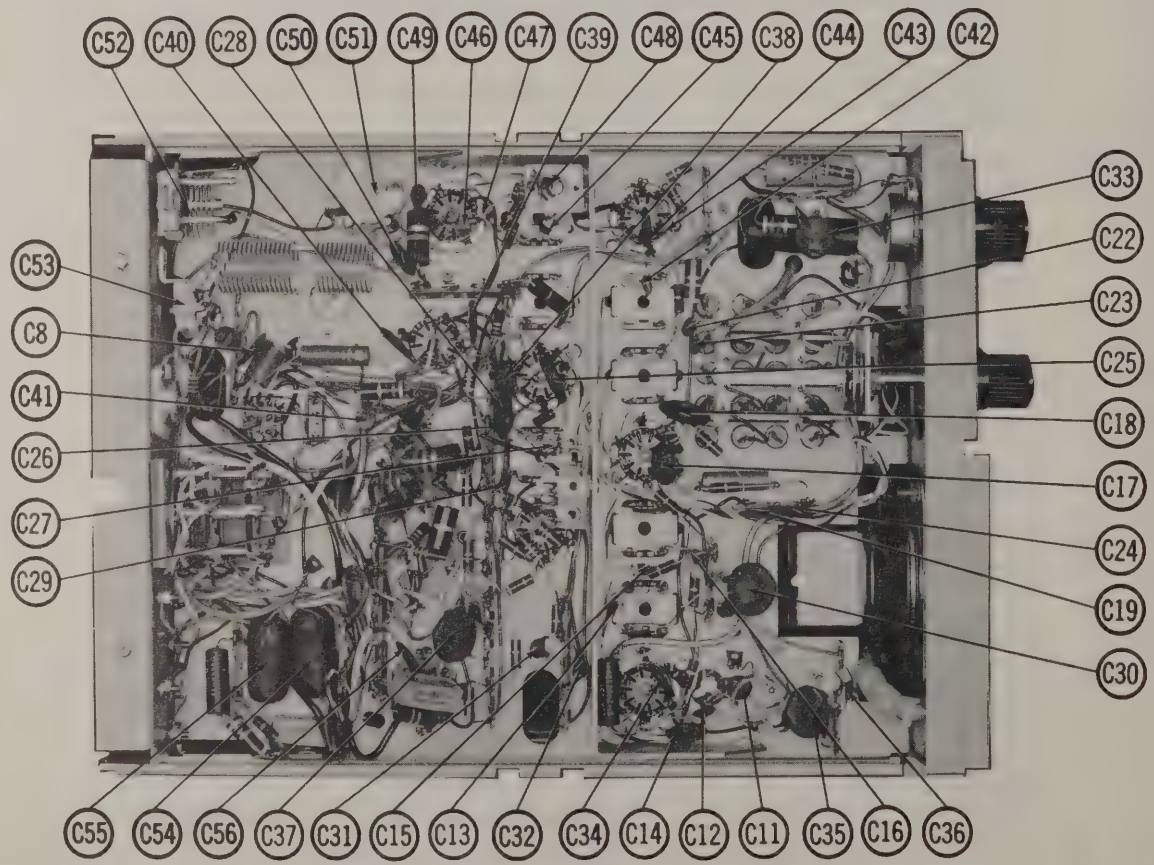
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

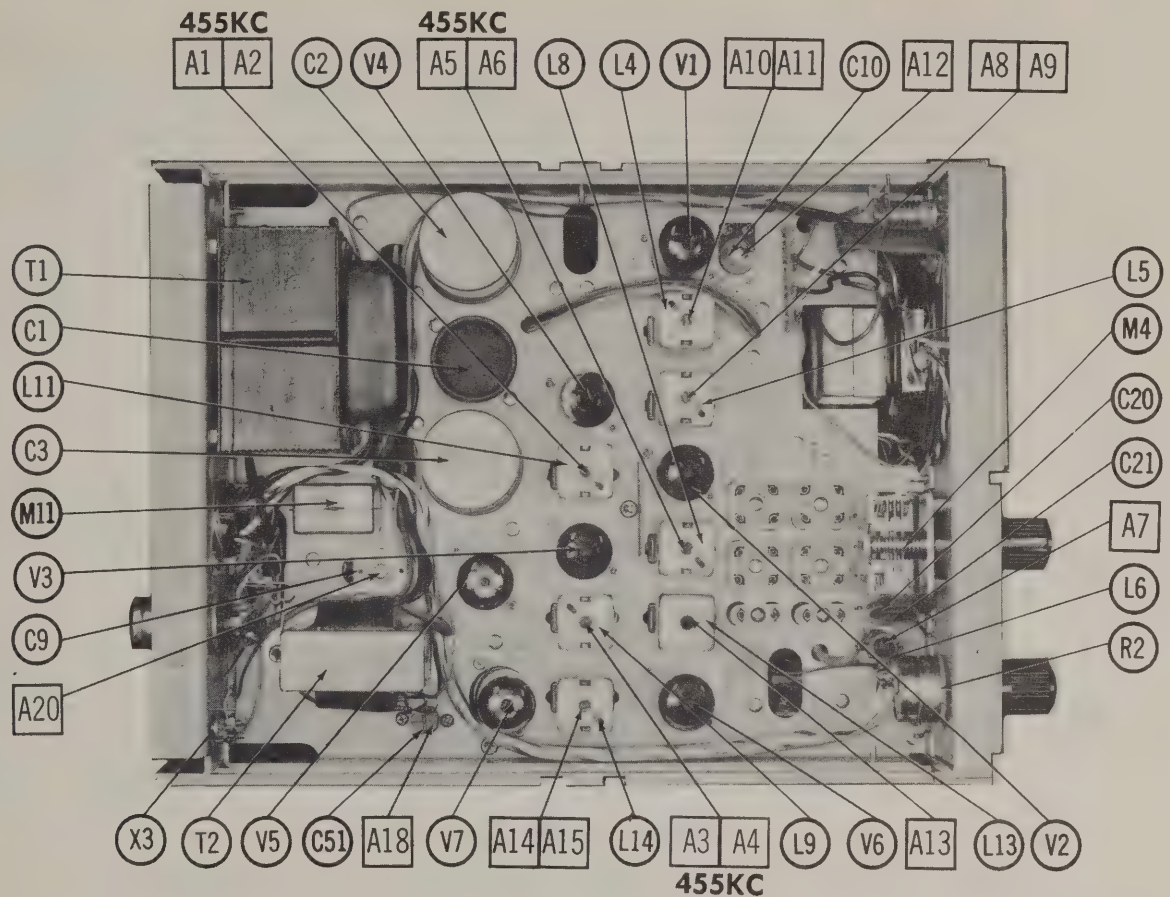
Connect either 50Ω dummy load or the normally used antenna system. Set Channel Selector to the usuable channel nearest channel 11 (27.085MC).

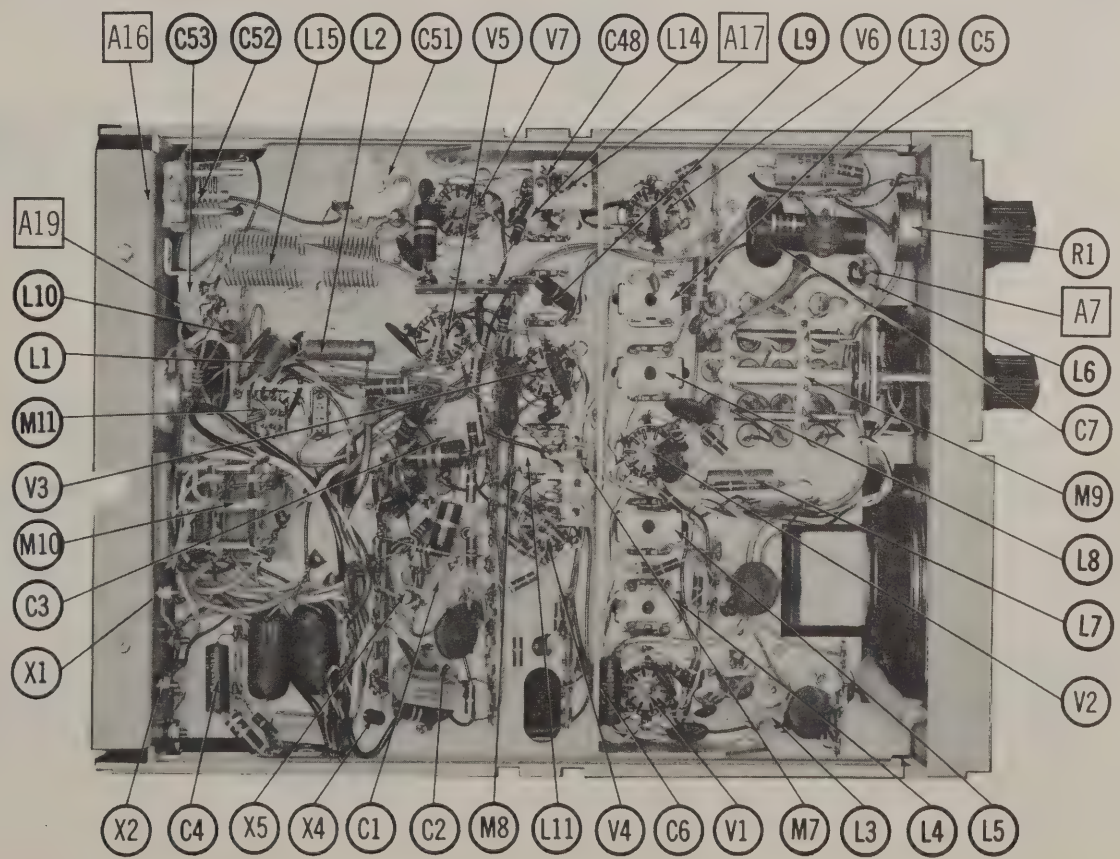
INDICATOR	ADJUST	REMARKS
Connect VTVM, set to read negative voltage, to point (B).	A13	Key Transmitter. Adjust for -4 to -5 volts.
Connect VTVM, set to read negative voltage, to point (C).	A14, A15	Key Transmitter. Adjust for -40 to -50 volts.
Connect VTVM, set to read negative voltage, to point (C).	A16, A17	Remove Transmitter crystal. Set A16 to MINIMUM capacity position. Key Transmitter. Adjust A17 for MINIMUM indication (grid drive).
Connect a 0-100MA DC to the meter jack.	A18	Replace Transmitter crystal. Key Transmitter. Adjust for MINIMUM plate current (approx. 6MA).
Field strength meter or previously connected milliameter.	A16, A19	Key Transmitter. Adjust A16 for maximum indication. Adjust A19 for a plate current of 18MA (5 Watts).
Transmit indicator on front panel.	A20	Key Transmitter. Adjust brightness level. (Excessive Brightness uses Transmitter power).

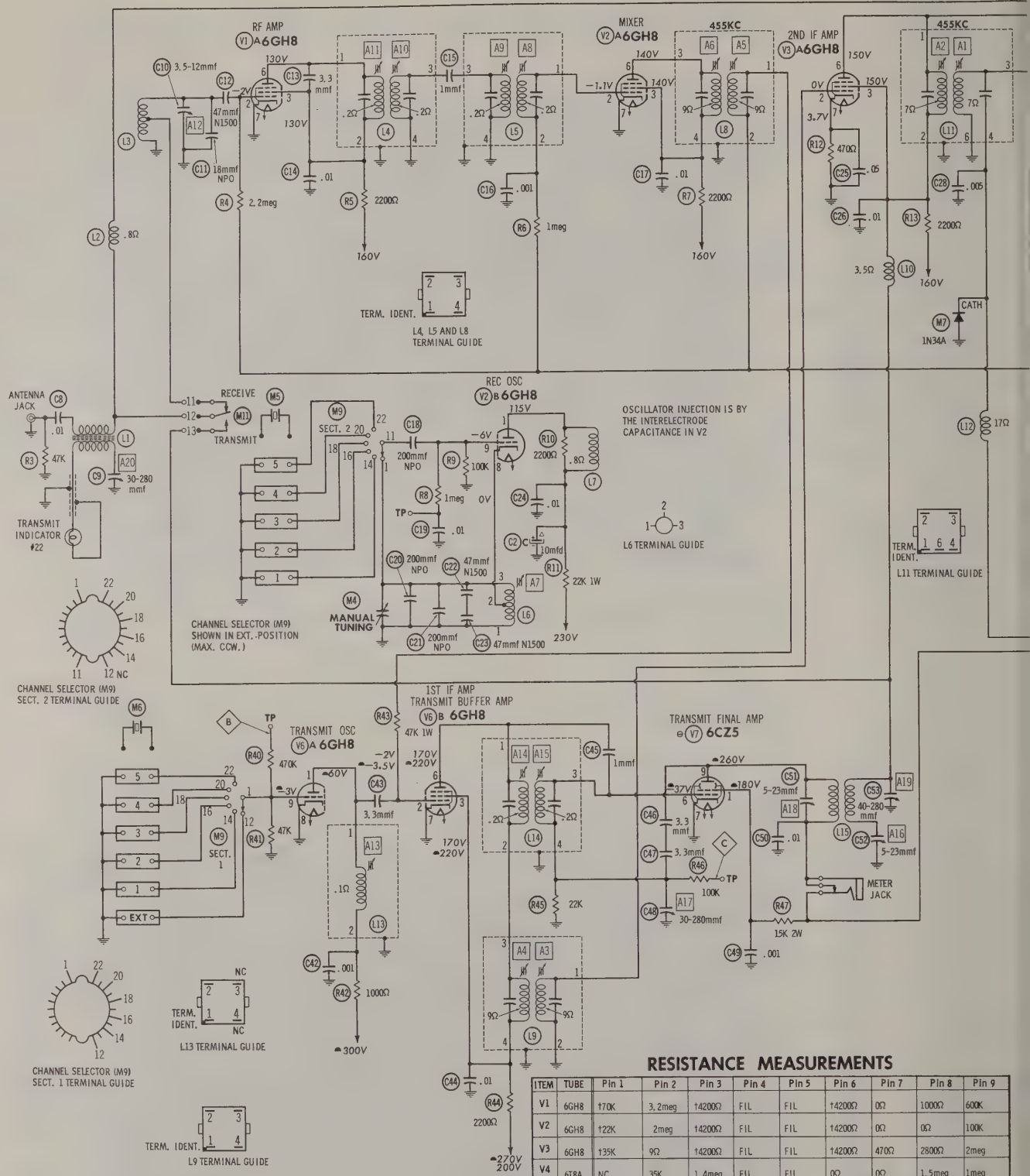
© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY524


R13
R37
R36
R12
R47
R35
R46
R45
R44
R41
R40
R43
R42
R19
R20
R39
R38
R3
R32
R31
R33
R30
R14
R24
R29
R15
R9
R8
R21
R10
R7
R16
R5
R6
R17
R51
R49
R50
R48
R28
R11
R52
R34
R25
R26
R18
R27
R22
R23
R4


C52
C40
C28
C50
C51
C49
C46
C47
C39
C48
C45
C38
C44
C43
C42
C53
C8
C41
C26
C27
C29
C33
C22
C23
C25
C18
C17
C24
C19
C30
C55
C54
C56
C37
C31
C15
C13
C32
C34
C14
C12
C11
C35
C16
C36


455KC
455KC
A1
A2
C2
V4
A5
A6
L8
L4
V1
A10
A11
C10
A12
A8
A9
T1
C1
L11
C3
M11
V3
C9
A20
L5
M4
C20
C21
A7
L6
R2
X3
T2
V5
C51
A18
V7
A14
A15
L14
A3
A4
L9
V6
A13
L13
V2
455KC


A16
C53
C52
L15
L2
C51
V5
V7
C48
L14
A17
L9
V6
L13
C5
A19
L10
L1
M11
V3
M10
C3
X1
R1
A7
L6
C7
M9
L8
L7
V2
X2
C4
X5
X4
C1
C2
M8
L11
V4
C6
V1
M7
L3
L4
L5


RF AMP V1 A 6GH8
MIXER V2 A 6GH8
2ND IF AMP V3 A 6GH8
455KC
455KC
REC OSC V2 B 6GH8
OSCILLATOR INJECTION IS BY THE INTERELECTRODE CAPACITANCE IN V2
ANTENNA JACK
RECEIVE
TRANSMIT
TRANSMIT INDICATOR #22
CHANNEL SELECTOR (M9) SHOWN IN EXT.-POSITION (MAX. CCW.)
MANUAL TUNING
CHANNEL SELECTOR (M9) SECT. 2 TERMINAL GUIDE
L4, L5 AND L8 TERMINAL GUIDE
L6 TERMINAL GUIDE
L11 TERMINAL GUIDE
1ST IF AMP TRANSMIT BUFFER AMP V6 B 6GH8
TRANSMIT OSC V6 A 6GH8
TRANSMIT FINAL AMP V7 6CZ5
METER JACK
CHANNEL SELECTOR (M9) SECT. 1 TERMINAL GUIDE
L13 TERMINAL GUIDE
L9 TERMINAL GUIDE

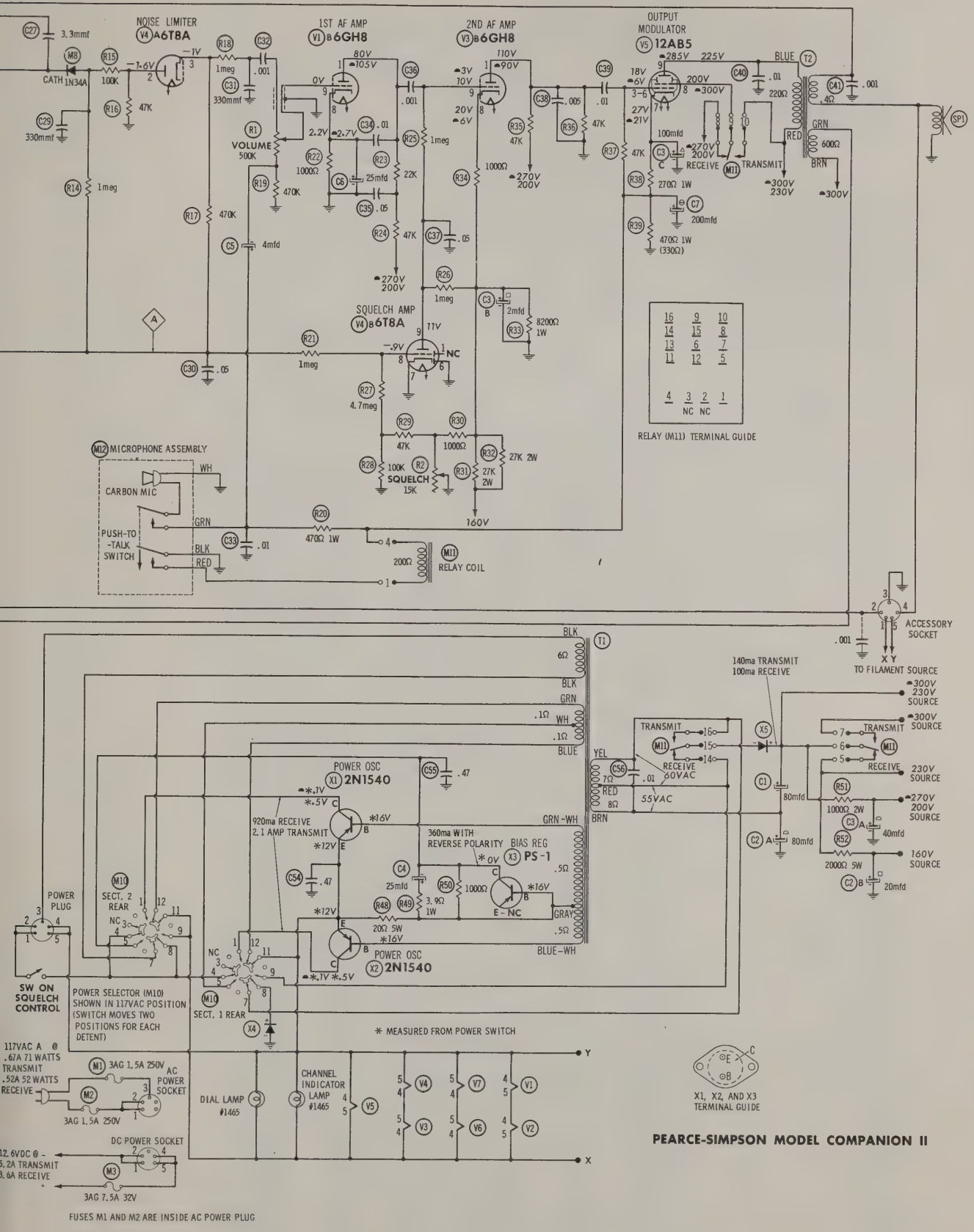
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6GH8	†70K	3.2meg	†4200Ω	FIL	FIL	†4200Ω	0Ω	1000Ω	600K
V2	6GH8	†22K	2meg	†4200Ω	FIL	FIL	†4200Ω	0Ω	0Ω	100K
V3	6GH8	†35K	9Ω	†4200Ω	FIL	FIL	†4200Ω	470Ω	2800Ω	2meg
V4	6T8A	NC	35K	1.4meg	FIL	FIL	0Ω	0Ω	1.5meg	1meg
V5	12AB5	NC	NC	47K	FIL	FIL	47K	740Ω ◓400Ω	†1000Ω ◓†0Ω	†220Ω
V6	6GH8	†◓47K	900K	†3200Ω	FIL	FIL	†3200Ω	0Ω	0Ω	47K
V7	6CZ5	†◓15K	NC	NC	FIL	FIL	22K	0Ω	NC	†◓600Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS TAKEN IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
◓ MEASURED IN TRANSMIT POSITION.
† MEASURED FROM OUTPUT OF X5.
NC NO CONNECTION.

⊖ See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964



PEARCE-SIMPSON MODEL COMPANION II

PARTS LIST AND DESCRIPTION

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp. -1st AF Amp.	6GH8	V5	Output - Modulator	12AB5
V2	Mixer - Rec. Osc.	6GH8	V6	Transmit Osc. -Buffer- 1st IF Amp.	6GH8
V3	2nd IF Amp. -2nd AF Amp.	6GH8			
V4	Noise Limiter -Squelch Amp.	6T8A	V7	Transmit Final	6CZ5 (6973)*

* Alternate

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2N1540	Power Osc.	DS-503	GE-3		
X2	2N1540	Power Osc.	DS-503	GE-3		
X3	PS-1	Bias Regulator	DS-520	GE-3		

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X4	140MA		1N2071 or 1N3195	1N3195	F4 or 40H
X5	140MA		1N2071 or 1N3195	1N3195	F4 or 40H

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Pearce-Simpson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	80	250	0406-036	AFH1-35	BB0241	XC2-24		FP128A	TVL-2520
C2A	▲80	250	0406-037	AFH3-25-40	DD0020	XC3-12	TMT3301	FP331.2	TVL-3582
B	■20	250							
C	▲10	250							
C3A	▲40	400	0406-038	AFH2-86-60				FP229.6	TVLS-3651*
B	■2	100		PRS1705				TT150X2	
C	▲100	25							
C4	25	15	0406-017	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C5	4	150	0406-045	PRS1400	BBR4-150	QT1-2	TD-4-150	TT150X4	TVA-1402
C6	25	15	0406-017	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C7	200	20	0406-031①	PRS1280	BR250-25	QT1-27	TD-250-50	TC50025	TVA-1208

① Some versions may use 100mfd in this application (Part #0406-019).
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C9	30-280	#0403-007						
C10	3.5-12	#0403-015		827B				
C11	18 NPO			TCZ-18		CCTO-180	CNO418	10TCC-Q18
C12	47 N1500		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7447	10TCU-Q47
C13	3.3		NPO-SI 3.3	TCZ-3R3	C10V33C	CCTO-3R3	CNO533	10TS-V33
C14	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C15	1		NPO-SI 1	TCZ-1			CNO510	10TCC-V10
C16	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C17	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C18	200 NPO			DTZ-200			CNO320	10TCC-T20
C19	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C20	200 NPO			DTZ-200			CNO320	10TCC-T20
C21	200 NPO			DTZ-200			CNO320	10TCC-T20
C22	47 N1500		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7447	10TCU-Q47
C23	47 N1500		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7447	10TCU-Q47
C24	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C25	.05		TTD-05				TA150	TH-S50
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C27	3.3		NPO-SI 3.3	TCZ-3R3	C10V33C	CCTO-3R3	CNO533	10TS-V33
C28	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C29	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C30	.05		TTD-05				TA150	TH-S50
C31	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C32	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C35	.05		TTD-05				TA150	TH-S50
C36	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C37	.05		TTD-05				TA150	TH-S50
C38	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C41	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C42	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C43	3.3		NPO-SI 3.3	TCZ-3R3	C10V33C	CCTO-3R3	CNO533	10TS-V33
C44	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C45	1		NPO-SI 1	TCZ-1			CNO510	10TCC-V10
C46	3.3		NPO-SI 3.3	TCZ-3R3	C10V33C	CCTO-3R3	CNO533	10TS-V33
C47	3.3		NPO-SI 3.3	TCZ-3R3	C10V33C	CCTO-3R3	CNO533	10TS-V33
C48	30-280	#0403-007						
C49	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C50	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C51	5-23	#0403-014						
C52	5-23	#0403-014						
C53	40-280	#0403-025						
C54	.47 200V		P288N-5		PM2P5	2DP-5-504	GEM205	2PS-P50
C55	.47 200V		P288N-5		PM2P5	2DP-5-504	GEM205	2PS-P50
C56	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

Pearce-Simpson Part Number.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Pearce-Simpson PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume	500K	2008-018A	F2-500K, SU204, or (B-60)	A47-500K-Z, RS-3	Q13-133 or (BU2, CF25, SS5, DC1)*	UA55A, SL2500 or (RU55A, SL38, SL2500) or (U48)
R2	Squelch & Switch	15K	2008-019A	F1-15K, SU204, KR-1	A47-15K-S, RS-3, SWE-12	B11-118, SK1, 76-1 or (BU2, CF10, SS5, GC)*	RU153L, SL38, SL2500, US41

* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA				ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS				IRC PART No.	WORKMAN PART No.	REMARKS
R48	20Ω 5W	PW5-20	5W-SQ-20			R52	2000Ω 5W	PW5-2000	5W-SQ-2000	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Pearce-Simpson PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Indicator Coupling						
L2	RF Choke(5.6uh)	1201-058		74F566AP	RTC8519	T820	
L3	Antenna (9 turns)	1201-075					
L4	RF	1201-055					
L5	Mixer Grid	1201-055					
L6	Rec. Osc.	1201-091A					
L7	RF Choke (5.6uh)	1201-058		74F566AP	RTC8519	T820	
L8	1st IF	1201-026	BC352	12-C30	RTC8632	T607	
L9	2nd IF	1201-026	BC353	12-C31	RTC8632	T608	
L10	RF Choke (73uh)	1201-036		6172	RTC8590	T303	
L11	3rd IF	1201-098					
L12	RF Choke (500uh)	1201-042	TV204	6174	RTC8592	T324	
L13	Transmit Osc.	1201-067					
L14	Transmit Interstage	1201-055					
L15	Final Tank (27 turns)	1201-099					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	SEC. 1	Pearce-Simpson PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .67A	12VDC Input @ 4A	115V Tap @ 55VAC @ .45A(AC)	1202-089					
	SEC. 2								
	12.6VAC @ 1.2A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	Pearce-Simpson PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	5000Ω	10.5K	1202-088					
		SEC. 2						
		3-4Ω						

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Pearce-Simpson PART No.	QUAM PART No.	
SP1	3" PM 3-4Ω	2501-014	30A05	

PARTS LIST AND DESCRIPTION (CONTINUED)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Pearce-Simpson PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1 1/2A 250V			31201.5		AGC 1 1/2	
M2	3AG	1 1/2A 250V			31201.5		AGC 1 1/2	
M3	3AG	7 1/2A 32V			31107.5	155020	AGC 7 1/2	HHJ-B

MISCELLANEOUS

ITEM No.	PART NAME	Pearce-Simpson PART No.	NOTES
M4	Tuning Capacitor	0403-024	Receiver Manual Tuning
M5	Crystal		Receive (Specify Channel when ordering)
M6	Crystal		Transmit (Specify Channel when ordering)
M7	Diode		Detector (1N34A)
M8	Diode		AVC-Noise Limiter Gate (1N34A)
M9	Switch	2701-054	Channel Selector (2 Section, 6 Position Wafer)
M10	Switch	2701-022A	Power Selector (2 Section, 2 Position Wafer
M11	Relay	1902-020	Transmit-Receive (4PDT Enclosed)
M12	Microphone Assy.	1601-013	Includes Push-to-talk Switch

CABINETS & CABINET PARTS

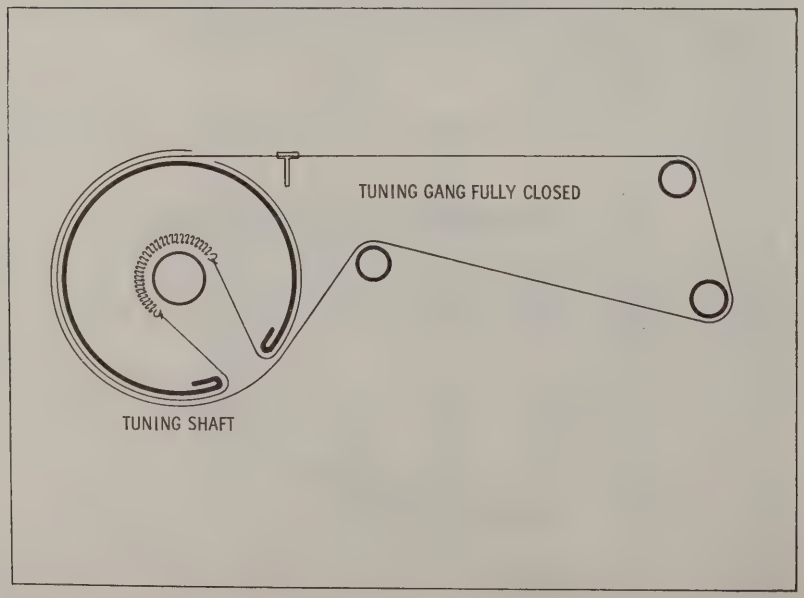
(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Knobs	1301-046	AC Power Cord	2601-022
Channel Number Inserts	0707-056	DC Power Cord	2601-003

WIRING DATA

General-use Hook-up Wire .... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead ..... Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable ..... Use BELDEN No. 8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene)
8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression .... Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap ..... Use BELDEN No. 8661 (3/8 In.)

DIAL CORD STRINGING



TRADE NAME: Pearce-Simpson Model Escort

SUPPLIER: For Current Address, see Master Index

TYPE SET: 9 Tube — 3 Transistor Transceiver

POWER SUPPLY: 110 — 120 Volts AC, 60 Cycles (or)
12 Volt Storage Battery

RATING: 75 Watts, .75 Amp. @ 117VAC (Transmit)
55 Watts, .58 Amp. @ 117VAC (Receive)
6.5 Amp. @ 12.6VDC (Transmit)
4.2 Amp. @ 12.6VDC (Receive)

TUNING RANGE: Any 8 CB Channels 1 thru 23
Receiver may be continuously tuned.

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A6, A8 thru A11, A14, A15	GENERAL CEMENT #5097, 8727, 8607 WALSCO #2515
A7, A12	GENERAL CEMENT #8272, 8276, 9298 WALSCO #2519, 2525, 2541
A13	GENERAL CEMENT #8282, 8606, 9295 WALSCO #2526, 2543, 2544
A16 thru A19	GENERAL CEMENT #5097, 8727, 5003 WALSCO #2515, 2516, 2518

RECEIVER ALIGNMENT

Calibrate signal generator to required channels by zero beating with another CB transmitter.
Keep output of signal generator at the lowest level consistent with a clear indication on VTVM.
Connect DC probe of VTVM to point Ⓐ, common to ground.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 (grid) of V2 (Mixer), low side to chassis (455KC Unmod.).	Any	A1, A2, A3, A4, A5, A6	Xtal-Tune Switch (M15) in Xtal position. Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis. (Tune to channel freq.).	11 (27.085MC) or center channel used	A7, A8, A9, A10, A11	"
"	1 (26.965MC) or lowest channel used	A12	Xtal-Tune Switch (M15) in tune position, set dial pointer to channel used. Adjust for maximum indication.

TRANSMITTER ALIGNMENT

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPART D, SECTION 95.95).

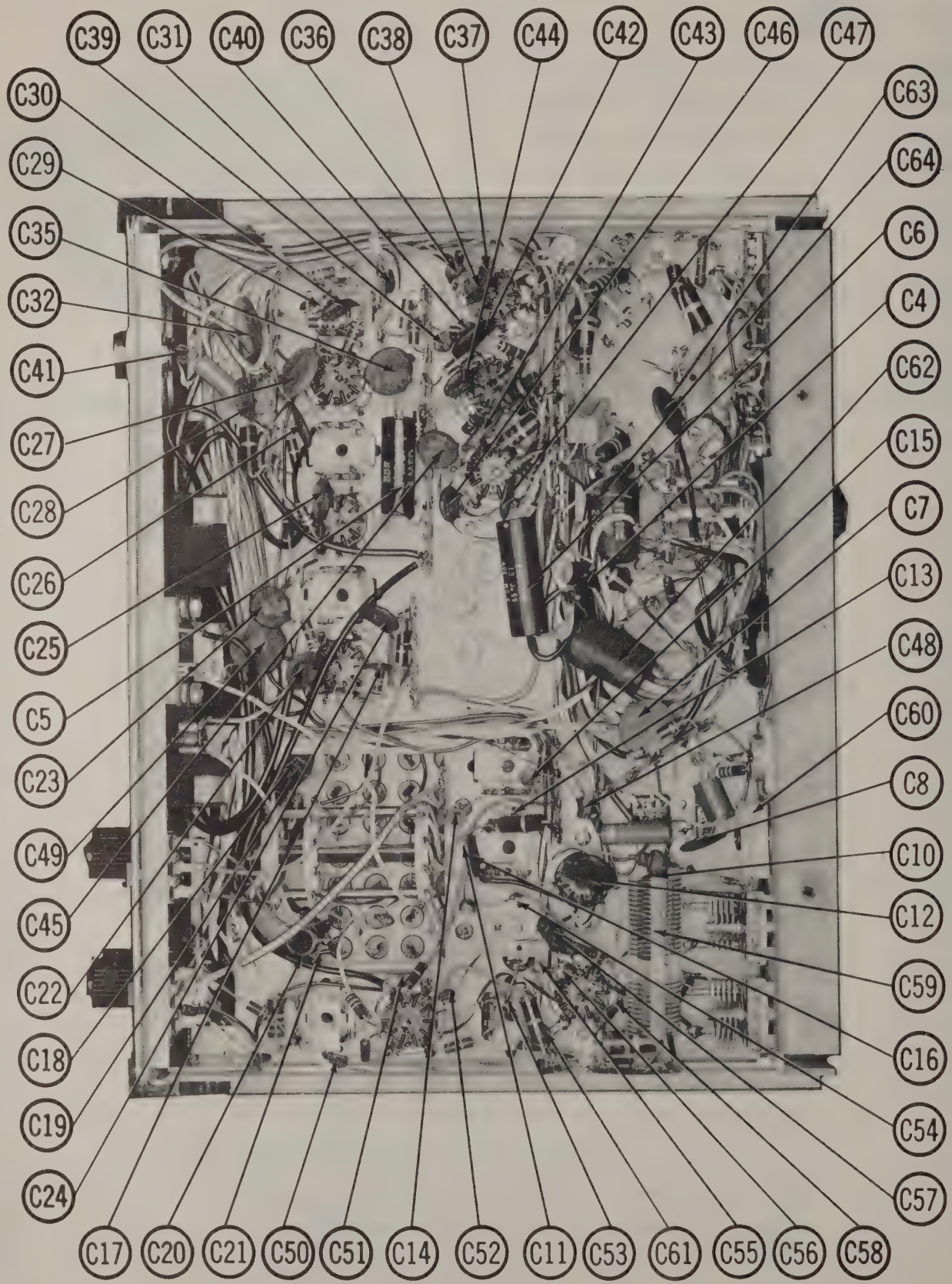
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

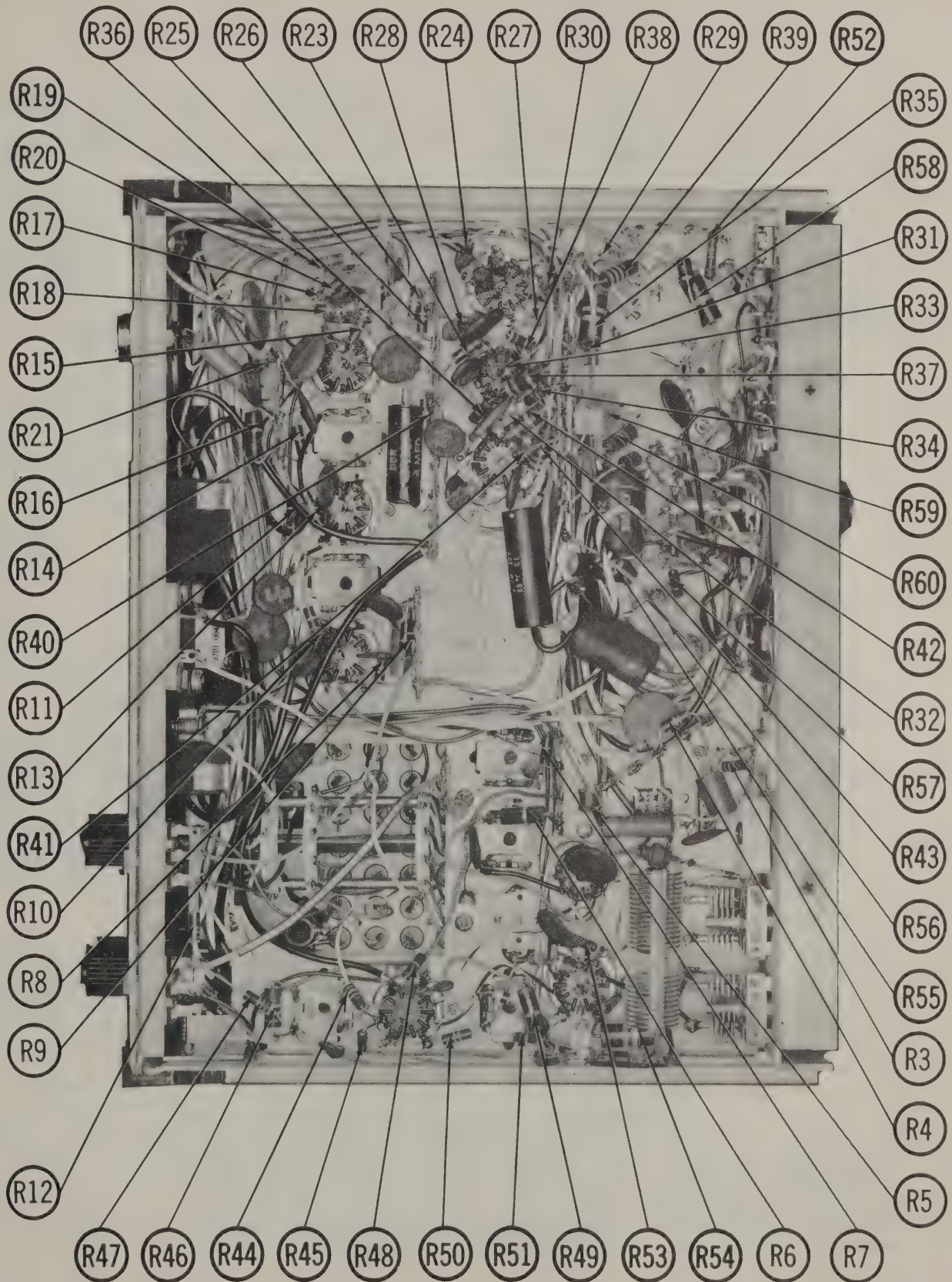
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

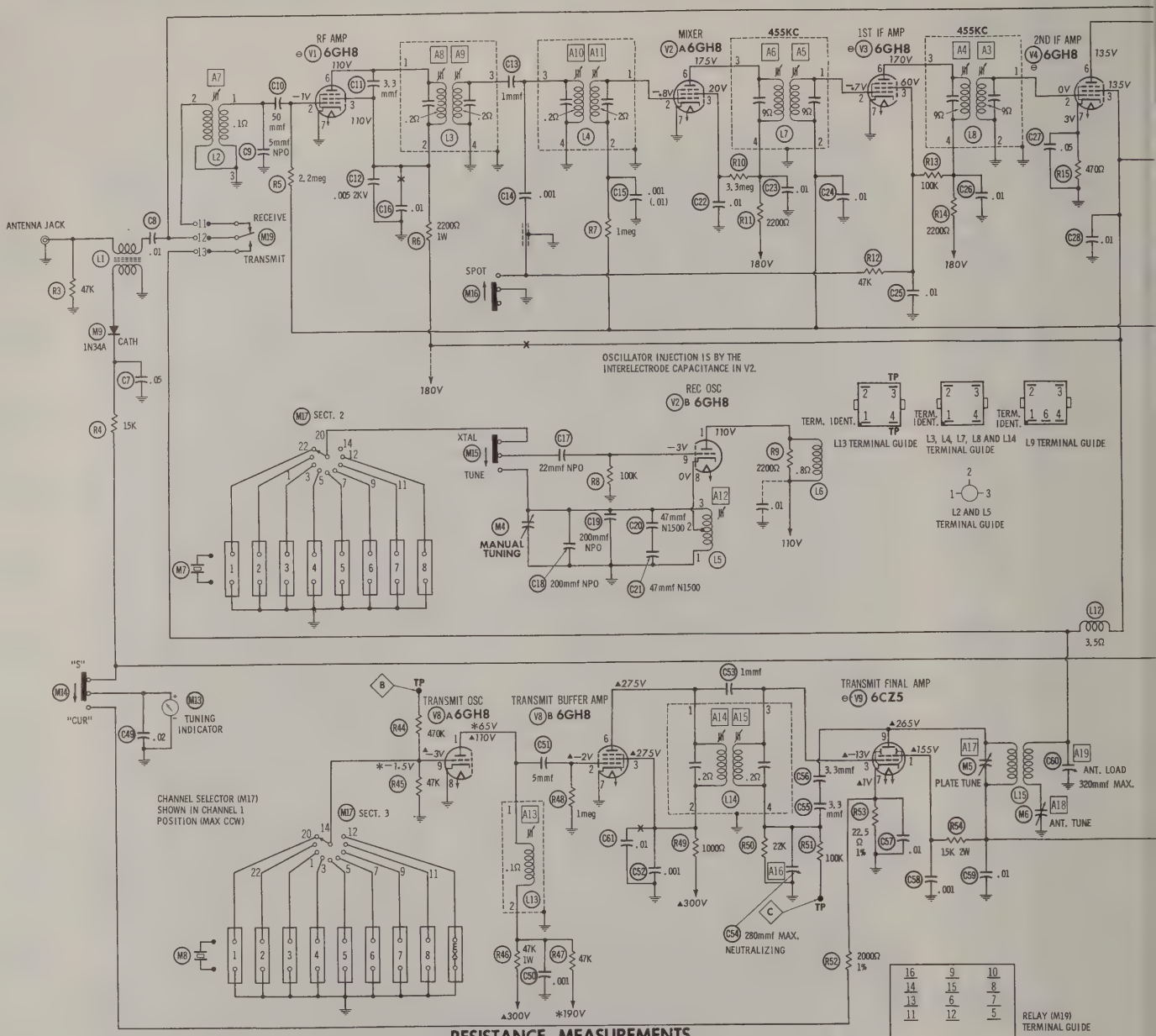
Connect either 50Ω dummy load or the normally used antenna system. Set to Channel 11 (27.085MC) or Center Channel Used.

INDICATOR	ADJUST	REMARKS
DC probe of VTVM to point Ⓑ, common to ground.	A13	Key transmitter. Adjust for -4V to -5V.
DC probe to point Ⓒ, common to ground.	A14, A15	Key transmitter. Adjust for maximum. Readjust A13 for -50V.
"	A16, A17, A18	Set A18 (Ant. Tune) to MINIMUM. (Line up red dots). Remove crystal and key transmitter. Adjust A16 until no indication is obtained when A17 (Plate Tune) is rotated through its range.
Front panel meter. Switch (M14) in Plate Current position.	A17	Set A18 (Ant. Tune) as above. Replace crystal. Key transmitter and adjust A17 (Plate Tune) for deepest dip (approximately 6ma).
Front panel meter. Switch (M14) in plate current position or field strength meter.	A18	Key transmitter. Adjust for maximum indication.
"	A19	Key transmitter. Adjust for maximum indication without going into red area on meter scale (approx. 18ma). Repeat the last two steps.

© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY525


C39
C31
C40
C36
C38
C37
C44
C42
C43
C46
C47
C30
C29
C35
C32
C41
C27
C28
C26
C25
C5
C23
C49
C45
C22
C18
C19
C24
C63
C64
C6
C4
C62
C15
C7
C13
C48
C60
C8
C10
C12
C59
C16
C54
C57
C17
C20
C21
C50
C51
C14
C52
C11
C53
C61
C55
C56
C58


R36
R25
R26
R23
R28
R24
R27
R30
R38
R29
R39
R52
R19
R20
R17
R18
R15
R21
R16
R14
R40
R11
R13
R41
R10
R8
R9
R12
R35
R58
R31
R33
R37
R34
R59
R60
R42
R32
R57
R43
R56
R55
R3
R4
R5
R47
R46
R44
R45
R48
R50
R51
R49
R53
R54
R6
R7



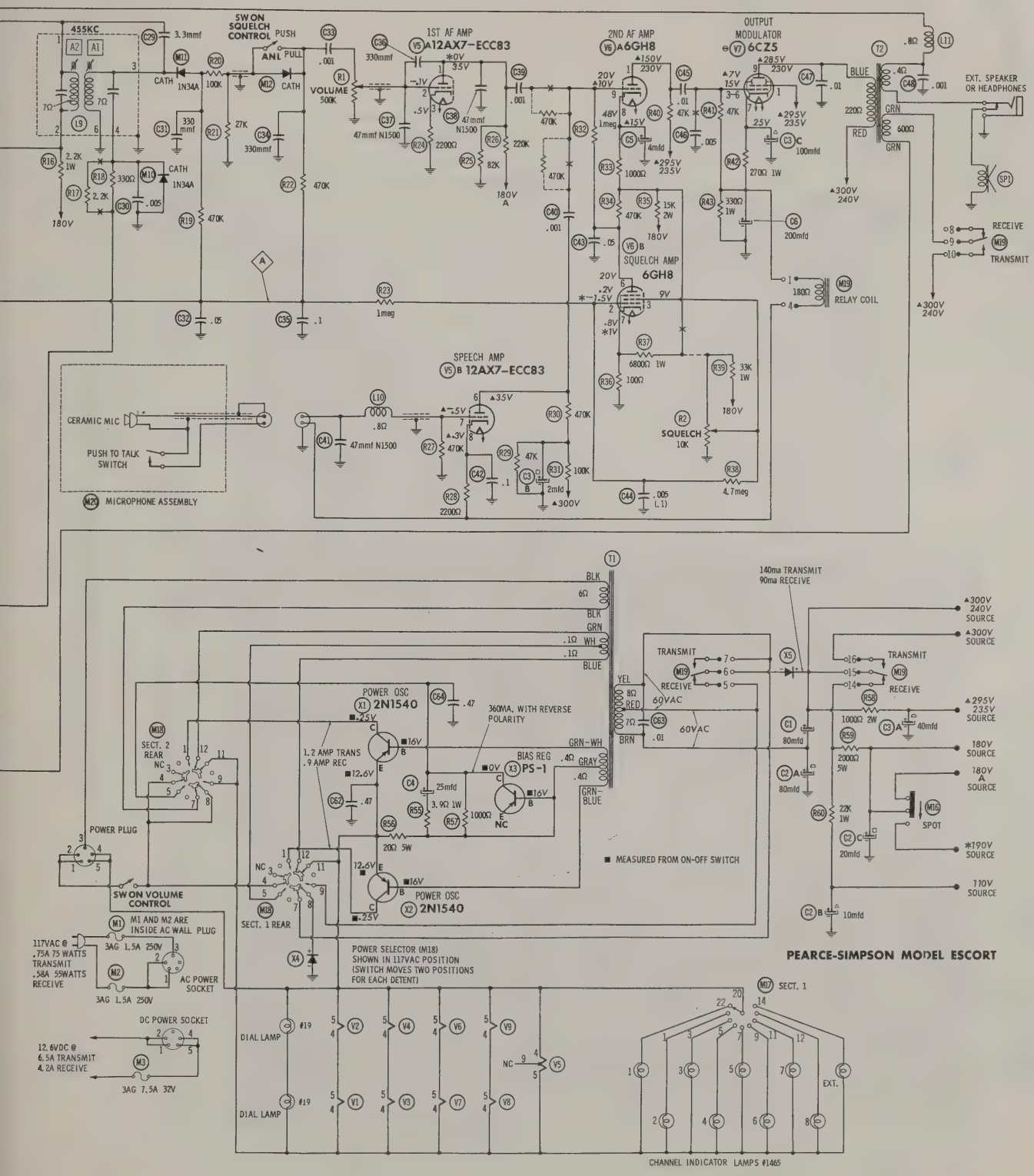
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6GH8	NC	2.6meg	†6400Ω	FIL	FIL	†6400Ω	0Ω	NC	NC
V2	6GH8	†22K	1.5meg	†3.3meg	FIL	FIL	†4200Ω	0Ω	.1Ω	100K
V3	6GH8	NC	420K	†100K	FIL	FIL	†4200Ω	0Ω	NC	NC
V4	6GH8	NC	9Ω	†4200Ω	FIL	FIL	†4200Ω	470Ω	NC	NC
V5	12AX7 ECC83	†150K	100K	2200Ω	FIL	FIL	†▲550K	470K	▲2200Ω	NC
V6	6GH8	†48K	1.2meg	†13K	FIL	FIL	460K	100Ω	7000Ω	1.5meg
V7	6CZ5	†1000Ω	NC	47K	FIL	FIL	47K	600Ω ▲450Ω	NC	†220Ω
V8	6GH8	†▲47K †•49K	1meg	†▲1000Ω	FIL	FIL	†▲1000Ω	0Ω	0Ω	47K
V9	6CZ5	†▲15K	NC	22K	FIL	FIL	NC	22.5Ω	NC	†▲600Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

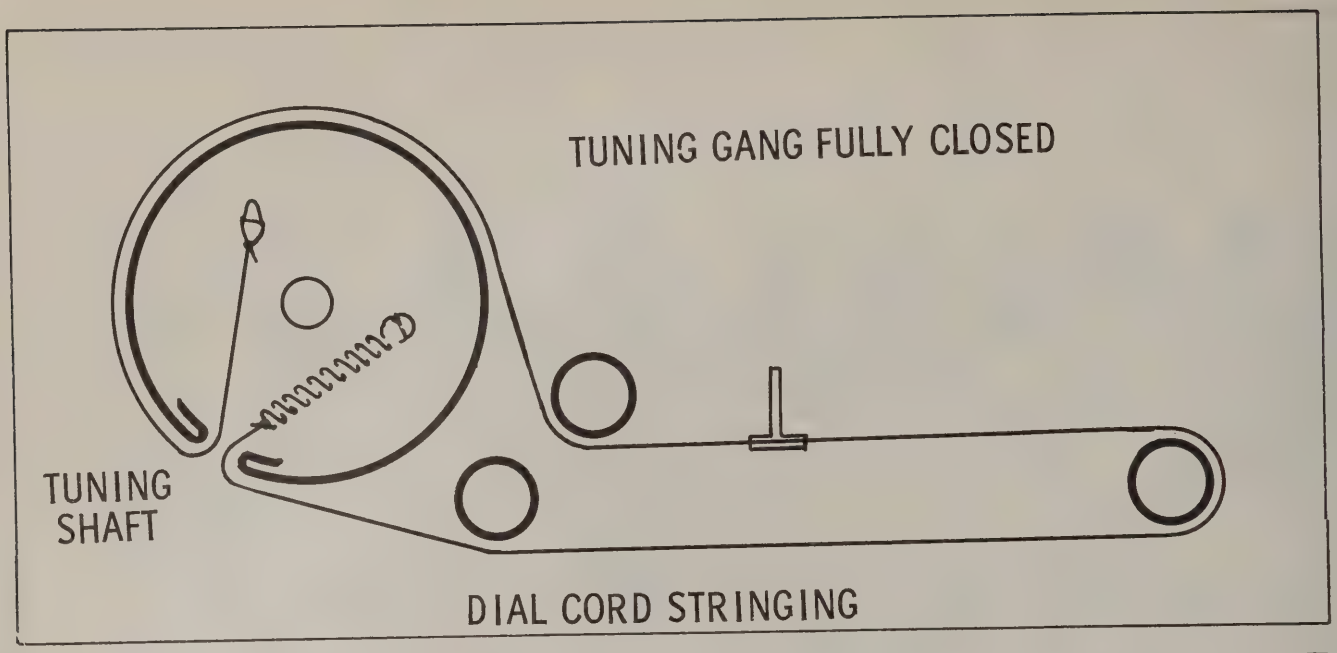
ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN TRANSMIT POSITION
• MEASURED IN SPOT POSITION.
† MEASURED FROM OUTPUT OF X5.
NC NO CONNECTION.

⊖ See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

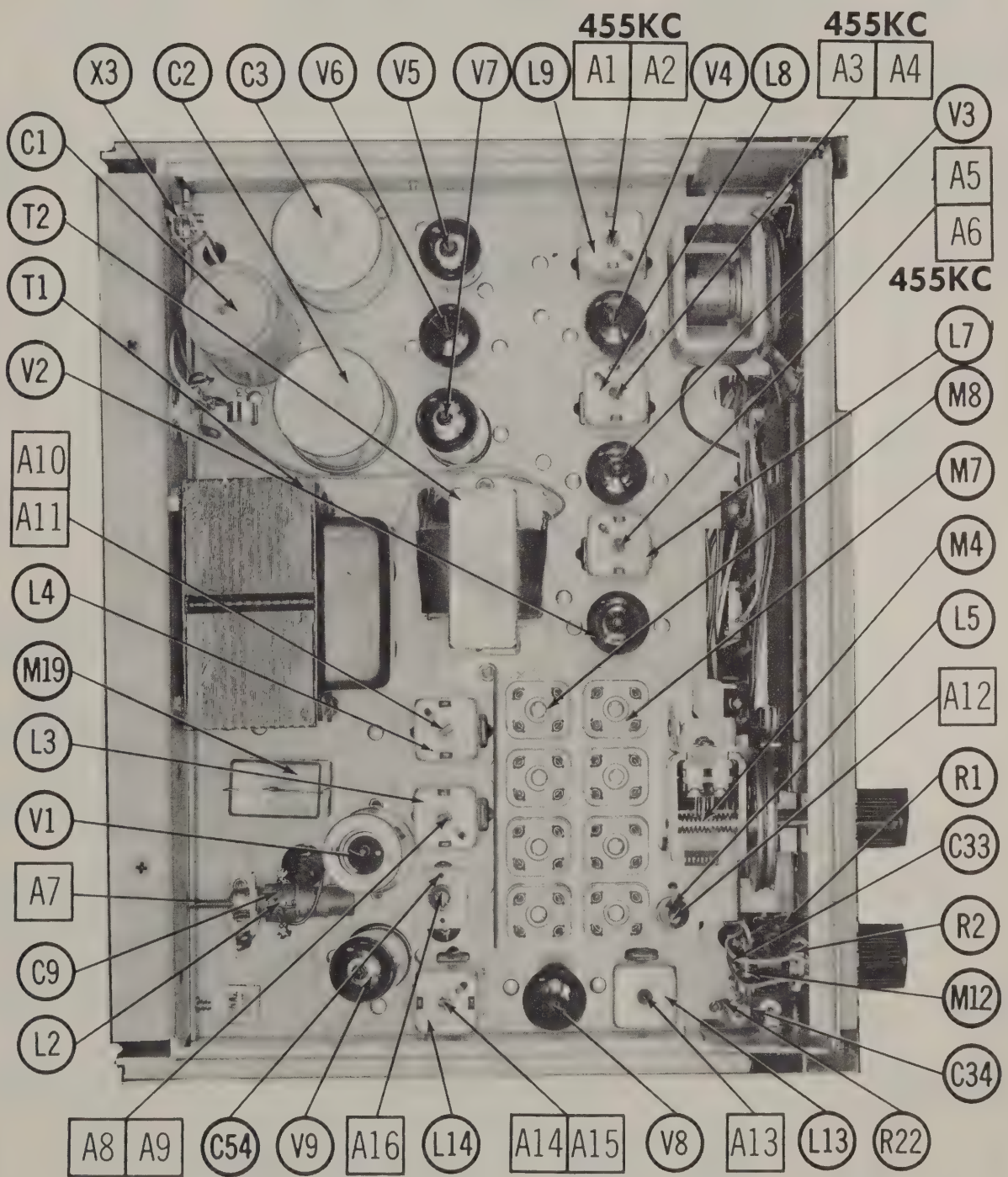
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964



PEARCE-SIMPSON MODEL ESCORT



DIAL CORD STRINGING


455KC
455KC
455KC
X3
C2
C3
V6
V5
V7
L9
A1
A2
V4
L8
A3
A4
V3
A5
A6
C1
T2
T1
V2
A10
A11
L4
M19
L3
V1
A7
C9
L2
L7
M8
M7
M4
L5
A12
R1
C33
R2
M12
C34
A8
A9
C54
V9
A16
L14
A14
A15
V8
A13
L13
R22

PARTS LIST AND DESCRIPTION

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.	6GH8*	V6	2nd AF Amp. - Squelch Amp.	6GH8
V2	Mixer-Receive Osc.	6GH8	V7	Output - Modulator	6CZ5 (6973)†
V3	1st IF Amp.	6GH8*	V8	Transmit Osc. -Buffer	6GH8
V4	2nd IF Amp.	6GH8*	V9	Final Amp.	6CZ5 (6973) †
V5	1st AF Amp. -Speech Amp.	12AX7/ECC83			

† Alternate Type
* Triode Section not used.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2N1540	Power Oscillator	DS-503	GE-3		
X2	2N1540	Power Oscillator	DS-503	GE-3		
X3	PS1	Bias Regulator	DS-520	GE-3		

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X4	140MA	CER71	A300 or D300	1N3195	F4 or 40H
X5	140MA	CER71	A300 or D300	1N3195	F4 or 40H

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Pearce-Simpson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	80	250	0406-036	AFH2-29	BB0241	XC2-24		FP128A	TVL-2520
C2A	▲80	250	0406-037	AFH3-25-40	C0180	XC3-12	TMT3301	FP331.2	TVL-3582
B	▲10	250							
C	■20	250							
C3A	▲40	400	0406-038	AFH2-86-80				FP229.6	TVLS-3651*
B	■2	100		PRS1705)				TT150X2	
C	▲100	25							
C4	25	15	0406-017	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C5	4	150	0406-045	PRS1400	BBR4-150	QT1-2	TD-4-150	TT150X4	TVA-1402
C6	200	20	0406-031	PRS1280	BR250-25	QT1-27	TD-250-50	TC50025	TVA-1208

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	.05		BPD-05	DD-503	H5	CCD-503	GP150	TG-S50
C8	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C9	5 NPO		NPO-DI 5	DTZ-4R7	C10V47C	CCTO-050	CNO547	10TCC-V50
C10	50		CI-1-50	D6-50	22R5Q5IJ	CM-15E-500J	MCE225	10TCC-Q50
C11	3.3		NPO-DI 3.3	D6-030	C10V33C	CM-15C-030	CNO533	10TCC-V33
C12	.005 2KV			DD30-502	HVC2005	3CCD-502	2HV247	20HK-D5
C13	1		NPO-DI 1	TCZ-1		CM-15C-010	CNO510	10TCC-V10
C14	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C15	.001	(.01)†	BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C16	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C17	22 NPO		NPO-DI 22	DTZ-22	C10Q22C	CCTO-220	CNO422	10TCC-Q22
C18	200 NPO			DTZ-200			CNO320	10TCC-T20
C19	200 NPO			DTZ-200			CNO320	10TCC-T20
C20	47 N1500			TCL-47				
C21	47 N1500			TCL-47				
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C24	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C25	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C27	.05		BPD-05	DD-503	H5	CCD-503	GP150	TG-S50
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C29	3.3		NPO-DI 3.3	D6-030	C10V33C	CM-15C-030	CNO533	10TCC-V33
C30	.005		BPD-005	DD-502	BYA10D5	CCD-502	B220	5HK-D50
C31	330		DI 330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C32	.05		BPD-05	DD-503	H5	CCD-503	GP150	TG-S50
C33	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C34	330		DI 330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C35	.1 50V		TTD-1	CK-104	H6	1DP-2-104	TA010	TG-P10
C36	330		DI 330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C37	47 N1500			TCL-47				
C38	47 N1500			TCL-47				
C39	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C40	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C41	47 N1500			TCL-47				
C42	.1 50V		TTD-1	CK-104	H6	1DP-2-104	TA010	TG-P10
C43	.05		BPD-05	DD-503	H5	CCD-503	GP150	TG-S50
C44	.005	(.1)†	BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C45	.01		BPD-01	DD-103	BYA10S1	CCD-102	B210	5HK-D10
C46	.005	Note 1	BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C47	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C48	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C49	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C50	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C51	5		CI-1-5	D6-050	22R5V5K	CM-15C-050	CNO547	10TCC-V50
C52	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C53	1		NPO-DI 1	TCZ-1		CM-15C-010 427	CNO510	10TCC-V10
C54	280 Max.	#0403-007						
C55	3.3		NPO-DI 3.3	D6-030	C10V33C	CM-15C-030	CNO533	10TCC-V33
C56	3.3		NPO-DI 3.3	D6-030	C10V33C	CM-15C-030	CNO533	10TCC-V33
C57	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C58	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C59	.01		BPD-01	DD-103	BYA10S1	CCD-103 303	B110	5HK-S10
C60	320 Max.	#0403-022						
C61	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C62	.47 200V		V2161-47		DPMS2P47	2DP-5-474	PVC2047	2PS-P47
C63	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C64	.47 200V		V2161-47		DPMS2P47	2DP-5-474	PVC2047	2PS-P47

Pearce-Simpson Part Number.
Note 1. Not used in some versions.
† Alternate Value.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Pearce-Simpson PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume -Power Sw.	500K	2008-030	F2-500K, SU204, KR-1, or (B-60-S)	A47-500K-Z, SWE-12	Q13-133, SK3, 76-1 or (BU2, CF25, SS3, GC)*	U-48, US-26 or (UA55A, SL2500, US41) or (RU55A, SL38, SL2500, US41)
R2	Squelch ANL Switch	10K	2008-029	F1-10K, SPU304, KR-8		Q11-116, SK7 or (BU2, CF9, SS10, K)*	

* "SNAPTROL"

PARTS LIST AND DESCRIPTION (CONTINUED)

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R56	20Ω 5W	PW5-20	5W-SQ-20		R59	2000Ω 5W	PW5-2000	5W-SQ-2000	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Pearce-Simpson PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Meter Takeoff						
L2	Antenna	1201-097					
L3	RF	1201-055					
L4	RF	1201-055					
L5	Rec. Osc.	1201-091					
L6	RF Choke (5.6uh)	1201-058		74F566AP	RTC8519	T820	
L7	1st IF Trans.	1201-026	BC352	12-C30	RTC8632	T607	
L8	2nd IF Trans.	1201-026	BC353	12-C31	RTC8632	T608	
L9	3rd IF Trans.	1201-098					
L10	RF Choke (5.6uh)	1201-058		74F566AP	RTC8519	T820	
L11	RF Choke (5.6uh)	1201-058		74F566AP	RTC8519	T820	
L12	RF Choke (73uh)	1201-036		6172	RTC8590	T303	
L13	Transmit Osc.	1201-067					
L14	Buffer	1201-055					
L15	Final	1201-099					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	SEC. 1	Pearce-Simpson PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @.75A	12.6VDC @2.5A Input	120VCT @.5A (AC)	1202-089					
	SEC. 2								
	12.6VCT @3A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	Pearce-Simpson PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	5000Ω	10-5K	1202-088					
		SEC. 2						
		3-4Ω						

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Pearce-Simpson PART No.	QUAM PART No.	
SP1	3" PM 3-4Ω	2501-014	30A05	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Pearce-Simpson PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1½A 250V			31201.5		AGC 1½	
M2	3AG	1½A 250V			31201.5		AGC 1½	
M3	3AG	7½A 32V			31107.5	155020	AGC 7½	HHJ-B

MISCELLANEOUS

ITEM No.	PART NAME	Pearce-Simpson PART No.	NOTES
M4	Tuning Capacitor	0403-023	Receiver Tuning
M5	Tuning Capacitor	0403-014	Plate Tuning
M6	Tuning Capacitor	0403-014	Antenna Tuning
M7	Crystal		Specify Channel when ordering
M8	Crystal		Specify Channel when ordering
M9	Diode		Meter Rectifier (1N34A)
M10	Diode		Meter Rectifier (1N34A)
M11	Diode		Det.-AVC (1N34A)
M12	Diode	CER68	Noise Gate
M13	Meter	3701-004	Tuning Indicator
M14	Switch	2701-052	Meter (DPDT, Slide)
M15	Switch	2701-052	Xtal-Tune (DPDT, Slide)
M16	Switch	2701-052	Spot (DPDT, Slide)
M17	Switch	2701-053	Channel Selector (3 Section, 9 Position)
M18	Switch	2701-022A	Voltage Selector (2 Section, 2 Position)
M19	Relay	1902-020	Transmit-Receive (4 Pole,2 Position)
M20	Microphone Ass'y.	1601-011	Includes Push-To-Talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
All Knobs	1301-046
Channel Indicator Tabs (Fullset)	0702-018

ITEM	PART No.
AC Power Cord	2601-002
DC Power Cord	2601-003

WIRING DATA

General-use Hook-up Wire .... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors)
Shielded Antenna Lead ..... Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable ..... Use BELDEN No. 8499 Single Conductor Shielded (Neoprene)
8498 Single Conductor Shielded (Vinyl)
Ignition Noise Suppression .... Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap ..... Use BELDEN No. 8661 (3/8 In.)

TRADE NAME: Raytheon Model RAYCOM-II

SUPPLIER: For Current Address, see Master Index

TYPE SET: 10 Tube Transceiver

POWER SUPPLY: 110 - 120 Volts AC, 60 Cycles (or)
12 Volt Storage Battery

RATING: 65 Watts, .6 Amp. @ 117VAC (or)
3 Amp. @ 12.6VDC

TUNING RANGE: Any 10 CB Channels 1 thru 22
Receiver may be continuously tuned.

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A6	GENERAL CEMENT #5097, 8607, 8727 WALSCO #2515
A9 thru A13	GENERAL CEMENT #5000, 5003, 5006 WALSCO #2515, 2516, 2518
A7, A8, A14, A15	GENERAL CEMENT #8282, 8606, 9295 WALSCO #2526, 2545, 2544

RECEIVER ALIGNMENT

The Channel 11 crystal in position A should not be removed or adjusted as it forms the reference for the tuned receiver calibration, and it is factory preset.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
Across antenna terminals. Tune to 27.085MC (Unmod.).	A(Channel 11)	A1 thru A10	Adjust for maximum front panel meter deflection.
"	A(Channel 11)	A11	Set the tuning dial to the Channel 11 calibration mark. Switch channel selector to "tune" position. Adjust A11 for maximum meter deflection.

TRANSMITTER ALIGNMENT

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPART D, SECTION 95.95).

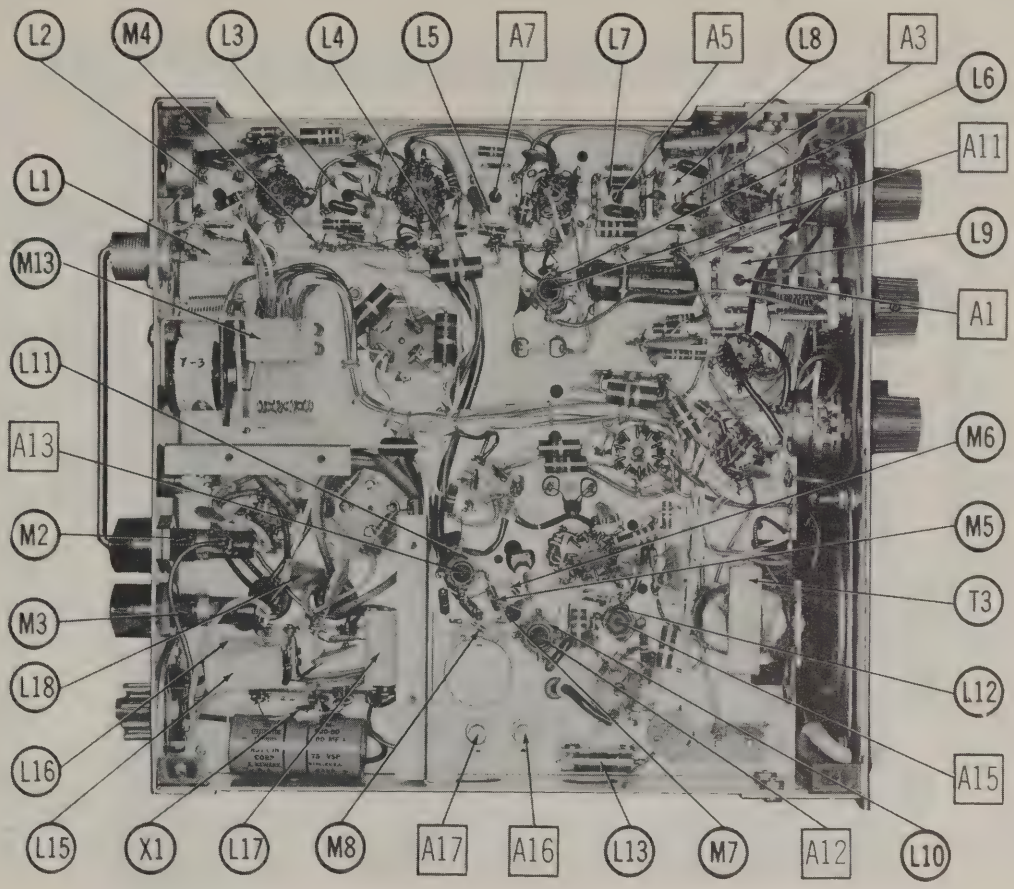
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

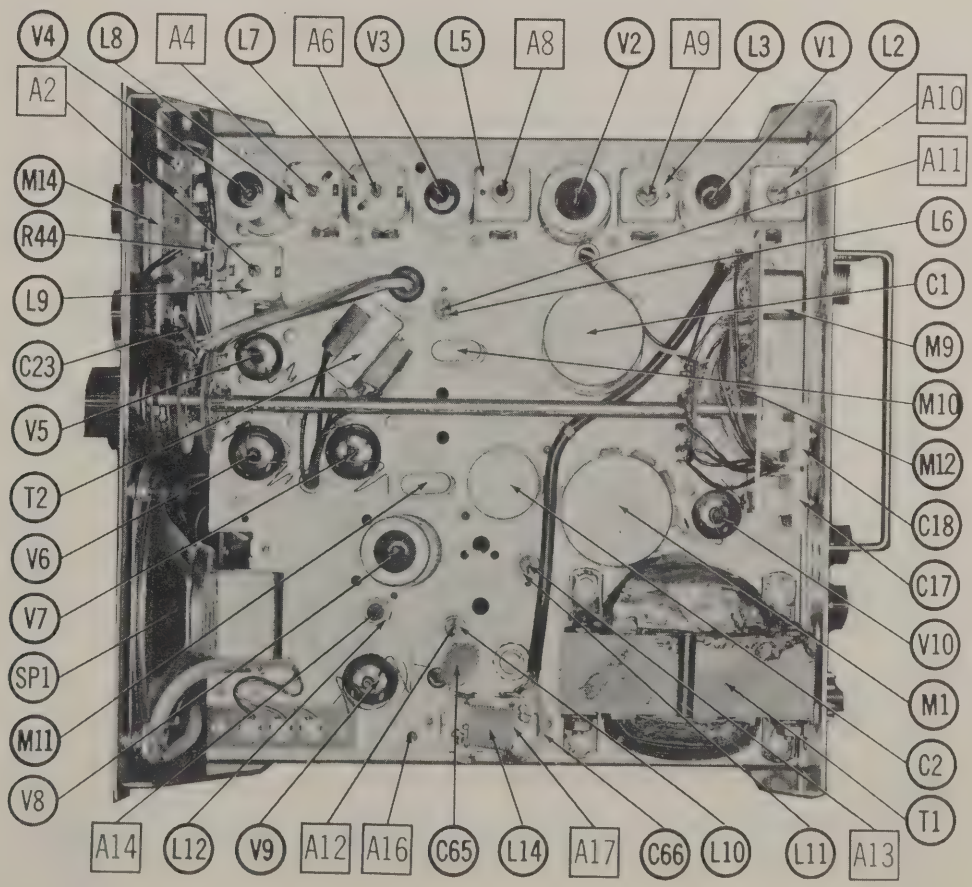
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

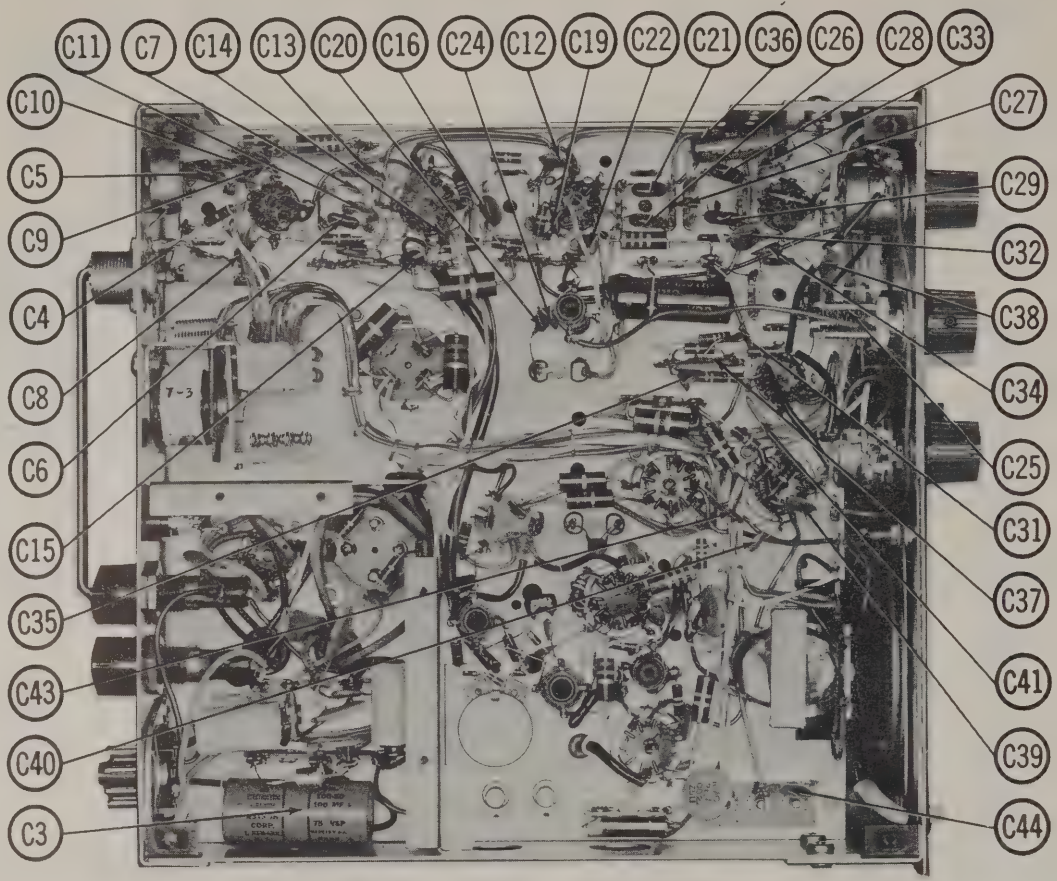
Connect either 50Ω dummy load or the normally used antenna system.

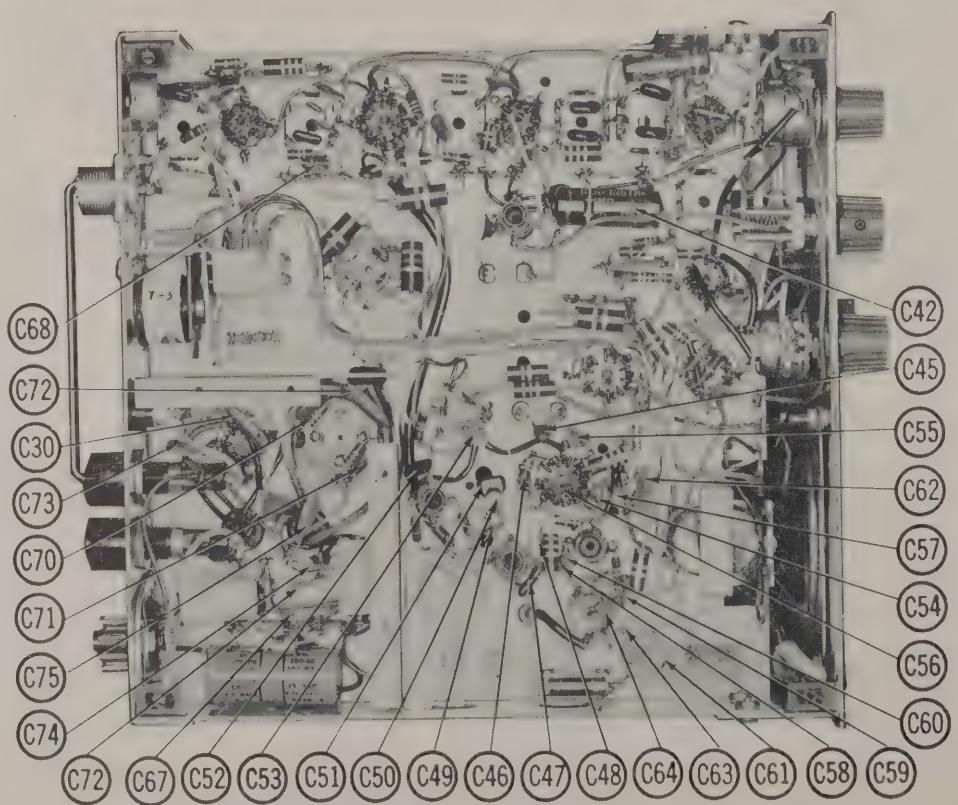
		ADJUST	REMARKS
Connect a DC VTVM in series with 220K between pin 9 (grid) of V8A and ground.		A12	Key transmitter. Adjust for maximum. Turn counterclockwise one turn. Key transmitter several times to be sure that oscillator starts each time.
Connect DC VTVM across R35. (L12 CT)		A13, A14, A15	Adjust for maximum.
Connect DC VTVM across R35. Remove crystal (M11).		R4	Adjust for MINIMUM. (VTVM reading should be less than .2 Volt).
Connect a DC milliammeter in series with R36 and a low range DC VTVM across R36 (V9 plate).		A16, A17	Turn A17 clockwise (in) several turns. Alternately adjust A16 for MINIMUM deflection and A17 for maximum deflection until the meter indicates 22ma. (2.2 Volts across R36).

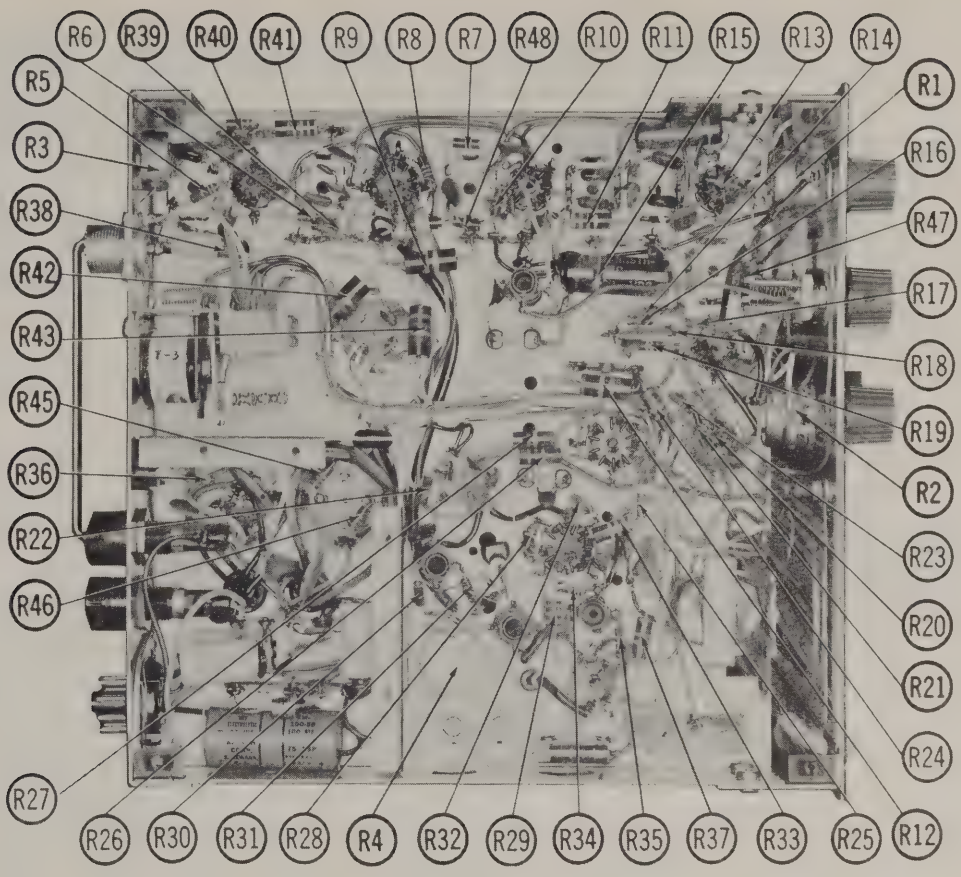
 © 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY588


L2
M4
L3
L4
L5
A7
L7
A5
L8
A3
L6
A11
L1
L9
M13
A1
L11
A13
M6
M2
M5
M3
T3
L18
L12
L16
A15
L15
X1
L17
M8
A17
A16
L13
M7
A12
L10


V4
L8
A4
L7
A6
V3
L5
A8
V2
A9
L3
V1
L2
A2
A10
A11
M14
L6
R44
C1
L9
M9
C23
M10
V5
M12
T2
C18
V6
C17
V7
V10
SP1
M1
M11
C2
V8
T1
A14
L12
V9
A12
A16
C65
L14
A17
C66
L10
L11
A13


C11
C7
C14
C13
C20
C16
C24
C12
C19
C22
C21
C36
C26
C28
C33
C10
C27
C5
C29
C9
C32
C4
C38
C8
C34
C6
C25
C15
C31
C35
C37
C43
C41
C40
C39
C3
C44


C68
C42
C72
C45
C30
C55
C73
C62
C70
C57
C71
C54
C75
C56
C74
C60
C72
C67
C52
C53
C51
C50
C49
C46
C47
C48
C64
C63
C61
C58
C59



PARTS LIST AND DESCRIPTION

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors)
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8498 Single Conductor Shielded (Neoprene) 8498 Single Conductor Shielded (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 in.)

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ RAYTHEON ◆ SYLVANIA ◆

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.	12BA6	V6	AF Amp. -Speech Amp.	12AX7
V2	Mixer - Osc.	6GH8	V7	Output - Modulator	12AB5
V3	2nd Converter	12BE6	V8	Transmit Osc. -Buffer	6GH8
V4	IF Amp.	12BA6	V9	Final RF Amp.	12AB5
V5	Detector -ANL	12AL5	V10	Rectifier	12X4

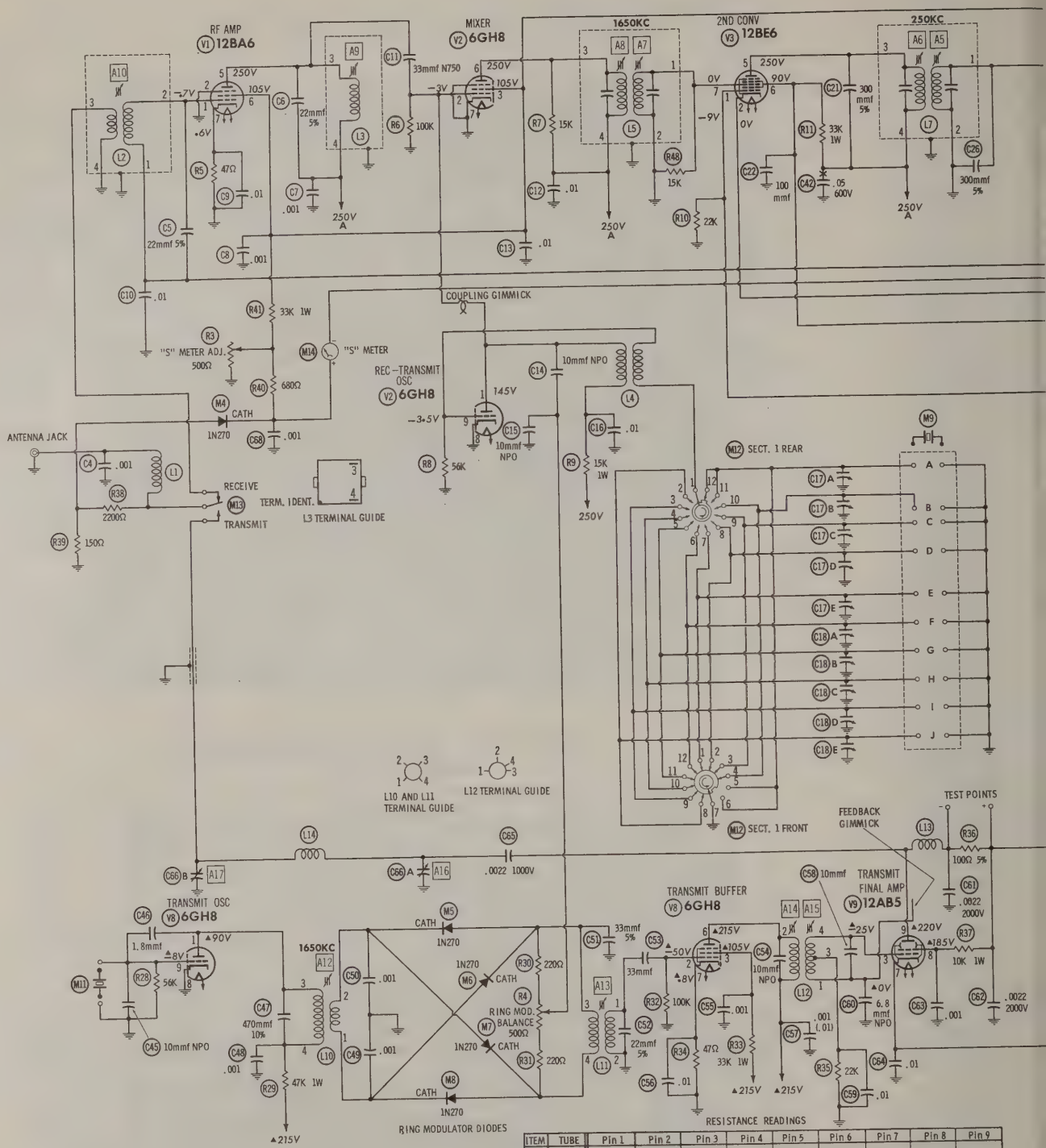
POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1		PT505	1N2070	1N2858 or 1N3754	40H

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RAYTHEON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲40	300							
B	▲60	300							
C	■20	300		AFH4-46	D0380	XC4-72	TMQ-4140	FP419.7	TVL-4570
D	50	25							
C2A	▲20	150							
B	■20	150		AFH3-05	XC0041	QT3-5	TMD-3112	FP311.2A	TVL-3433
C	20	150							
C3	100	50		PRS-1360	BR-100-50	QT1-23	TD-100-50	TC3501	TVA-1310

(CONTINUED ON PAGE 126)

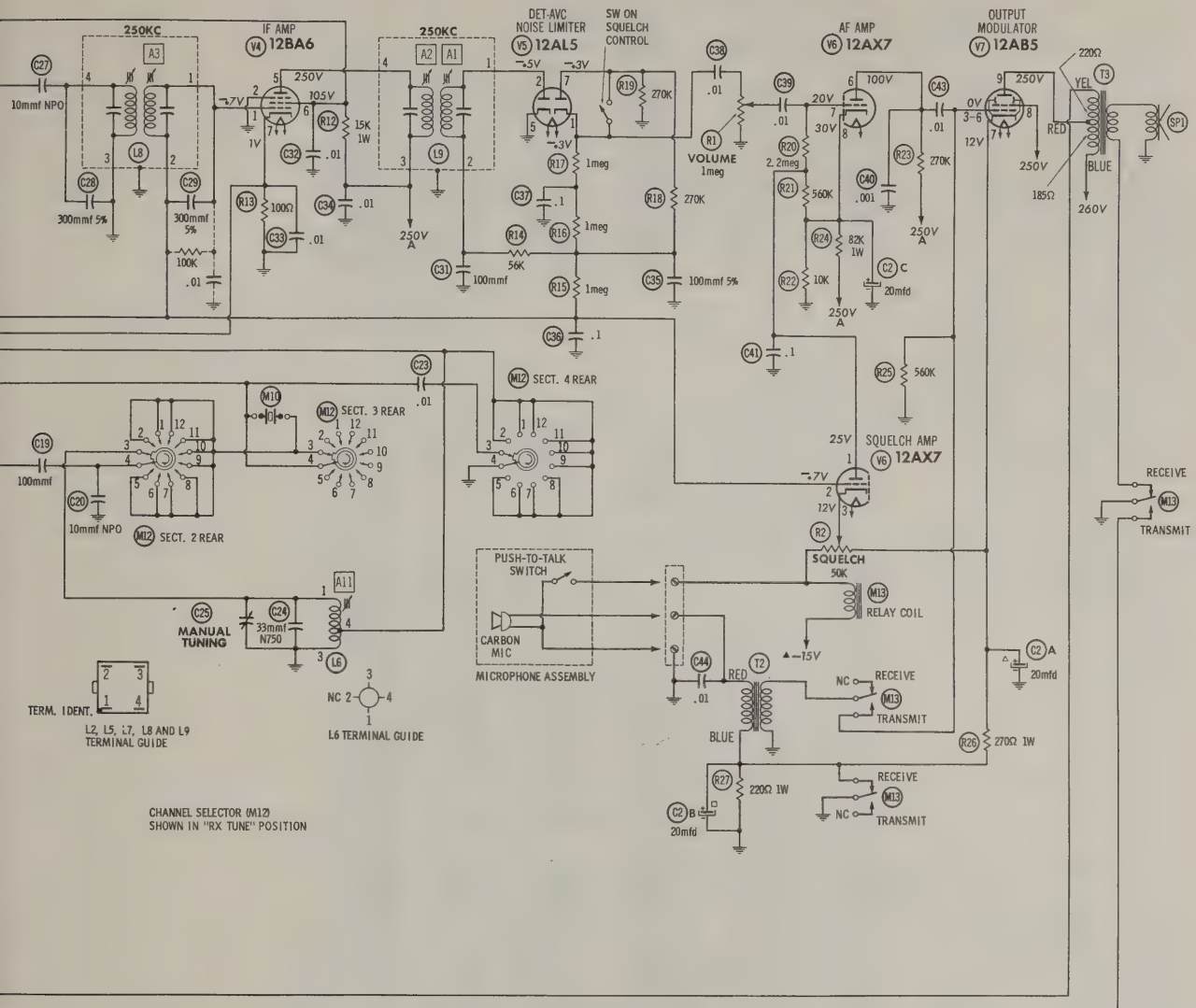


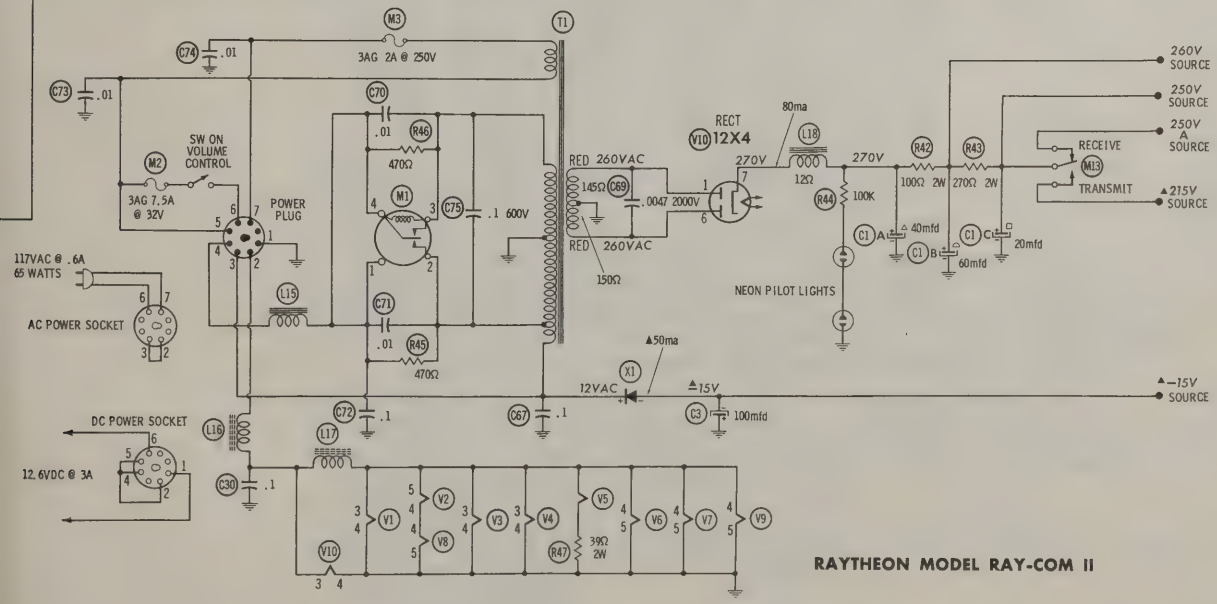
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12BA6	1.6meg	0Ω	FIL	FIL	†370Ω	†15K	47Ω		
V2	6GH8	†15K	100K	†15K	FIL	FIL	†370Ω	0Ω	0Ω	56K
V3	12BE6	22K	0Ω	FIL	FIL	†370Ω	†33K	.1Ω		
V4	12BA6	1.6meg	0Ω	FIL	FIL	†370Ω	†15K	100Ω		
V5	12AL5	2.6meg	600K	FIL	FIL	0Ω	0Ω	270K		
V6	12AX7	570K	1.6meg	490Ω	FIL	FIL	†270K	2.8meg	10K	NC
V7	12AB5	TP	TP	560K	FIL	FIL	560K	270Ω ▲490Ω	†370Ω	†600Ω
V8	6GH8	▲†47K	100K	▲†33K	FIL	FIL	▲†370Ω	47Ω	0Ω	56K
V9	12AB5	NC	NC	22K	FIL	FIL	NC	▲0Ω	▲†10K	†540Ω
V10	12X4	145Ω	NC	FIL	FIL	NC	150Ω	100K		

ALL MEASUREMENTS MADE IN "RECEIVE" POSITION UNLESS OTHERWISE DESIGNATED.
† MEASURED FROM PIN 7 OF V10. NC NO CONNECTION.
▲ MEASURED IN "TRANSMIT" POSITION.
TP TIE POINT.

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964





RAYTHEON MODEL RAY-COM II

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C5	22 5%			DTZ-22	C10Q22C	CM-19B-220J	CNO-422	10TCC-Q22
C6	22 5%			DTZ-22	C10Q22C	CM-19B-220J	CNO-422	10TCC-Q22
C7	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C8	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C9	.01		BPD-01	DD-103	BYA10S1	CCD-102	B-210	5HK-D10
C10	.01		BPD-01	DD-103	BYA10S1	CCD-102	B-210	5HK-D10
C11	33 N750		N750-DI 33	DTN-33	C10Q33U	CCTN-330	CN7-433	10TCC-Q33
C12	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C13	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C14	10 NPO		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C15	10 NPO		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C16	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C17A								
B								
C		#0561-68						
D								
E								
C18A								
B								
C		#0561-68						
D								
E								
C19	100		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C20	10 NPO		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C21	300 5%		1469-0003	TCZ-300	22R5T3	CM-15E-301	MCE237	MS-33
C22	100		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	33 N750		N750-DI 33	DTN-33	C10Q33U	CCTN-330	CN7-433	10TCU-Q33
C25								
C26	300 5%		1469-0003	TCZ-300	22R5T3	CM-15E-301	MCE237	MS-33
C27	10 NPO		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C28	300 5%		1469-0003	TCZ-300	22R5T3	CM-15E-301	MCE237	MS-33
C29	300 5%		1469-0003	TCZ-300	22R5T3	CM-15E-301	MCE237	MS-33
C30	.1							
C31	100		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C32	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	100 5%		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C36	.1 200V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C37	.1 100V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C40	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C41	.1		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C42	.05 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C43	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C44	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C45	10 NPO	(22) †	NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C46	1.8		NPO-SI 2		C10V2C			10TCC-V18
C47	470 10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C48	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C49	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C50	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C51	33 5%		NPO-DI 33	DTZ-33	C10Q33C	CCTO-330	CNO-433	10TCC-Q33
C52	22 5%		1469-000022	TCZ-22	22R5Q22	CM-19B-220J		MS-422
C53	33		NPO-DI 33	DTZ-33	C10Q33C	CCTO-330	CNO-433	10TCC-Q33
C54	10 NPO		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C55	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C56	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C57	.001	(.01) †	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C58	10		NPO-SI 10	TCZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C59	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C60	6.8 NPO		NPO-SI 6.8	TCZ-6R8	C10V68C	CCTO-6R8	CNO-568	10TCC-V68
C61	.0022 2000V		HVD-30-2200	DD30-202	HVC30D2	3CCD-202	3HV-222	30GA-D20
C62	.0022 2000V		HVD-30-2200	DD30-202	HVC30D2	3CCD-202	3HV-222	30GA-D20
C63	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C64	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C65	.0022 1000V		HVD-30-2200	DD30-202	HVC30D2	3CCD-202	3HV-222	30GA-D20
C66A		#0554						
B								
C67	.1 200V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C68	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C69	.0047 2000V							
C70	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C71	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C72	.1		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C73	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C74	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C75	.1		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10

Raytheon Part Number.
† Alternate Value.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			RAYTHEON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	1meg	0368-01	F2-1meg, SU204, KR-1 or (B-70-S)	A47-1meg-Z, FS-3, SWE-12	QCB1①, B13-137, TM5, 76-1②, or (BU2, CF26, SS14, GC)*	UA16A, SF1000, US-41 or (RU16A, SL38, SF1000, US-41) or (U53, US-26)
R2	Noise Gate & ANL Switch	50K	0353	F2-50K, SU204, KR-1 or (B-32, KR-1)	A47-50K-Z, FS-3, SWE-12	QCB1①, B13-123, TM5, 76-1②, or (BU2, CF63, SS14, GC)*	UA54A, SF1000, US-41 or (RU54A, SL38, SF1000, US-41) or (U33, US-26)
R3	Meter Adjust	500Ω 2W			U39-500	110-600	PFL-600
R4	Synthesizer Balance	500Ω	0341-20	F1-500, SN010, or B-4	A47-500-S, FKS-1/2	B11-103, SK6, or (BU2, CF4, SS6)*	UA52L, SN1000, or (RU52L, SL38, SN1000) or (U2)

* "SNAPTROL"
① Use QCB1 instead of Tab Mount Plate in TM5. ② Use Switch with Metal Housing.

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		RAYTHEON PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (.56MH)						
L2	RF Bandpass	0041-60					
L3	RF Amp. Plate	0041-61					
L4	Receiver Osc. Coil	0040-50					
L5	1st IF (1650KC)	0075-60					
L6	Tune Osc. Coil						
L7	2nd IF (250KC)	0075-17					
L8	3rd IF (250KC)	0075-17					
L9	4th IF (250KC)	0075-17					
L10	Transmit Osc. Plate						
L11	Driver Grid	0028-01					
L12	Driver Plate	0062-50					
L13	RF Choke (15MH)	TL-70 (0013)	SW-631	4609	RTC-8519	T959	
L14	Pi Network	TL-93(0027-01)					
L15	Hash Suppressor (15MH)	TL-70 (0013)		7825-8			
L16	Filament Choke						
L17	Filament Choke						

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	RAYTHEON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L18	.080ADC	12Ω	.5MH						

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	RAYTHEON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .6A (or) 12.6VCT @ 3A	560VCT @ .080A DC	12.6V @ 1.6A	ST-102A (1351-01)					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	RAYTHEON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2			1287-01	A-2929	A-4705*	25A24*	A-1X	* Drill New Mtg. Hole(s)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	RAYTHEON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	5000Ω*	3-4Ω	1312-20					* Modulation winding has DC resistance of 220Ω

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		RAYTHEON PART No.	QUAM PART No.	
SP1	4" PM 3-4Ω	0708-01	4A1	

VIBRATOR

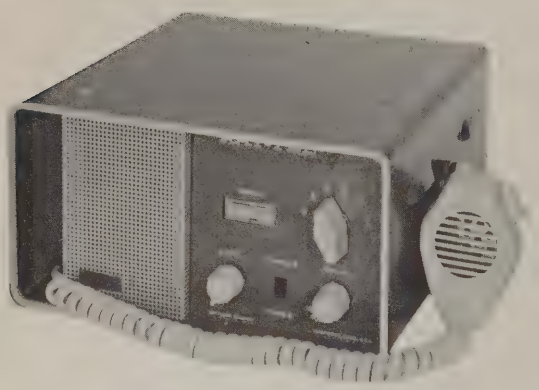
ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				RAYTHEON PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	12.6	115∿	G1601 (0750)	6301	G1601	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			RAYTHEON PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	7½A 32V	AGC 7½ (0670)		31107.5 (3AG 7½A 250V)	342001	AGC 7½	HKP
M3	3AG	2A 250V	AGC-2 (0667)		312002 (3AG 2A 250V)	342001	AGC-2	HKP

MISCELLANEOUS

ITEM No.	PART NAME	RAYTHEON PART No.	NOTES
M4	S Meter Rectifier		1N270
M5	Freq. Synthesizer		1N270
M6	Freq. Synthesizer		1N270
M7	Freq. Synthesizer		1N270
M8	Freq. Synthesizer		1N270
M9	Crystal		28.735MC Receiver Oscillator
M10	Crystal	0710-91	1900KC Receiver Oscillator
M11	Crystal	0710-90	1650KC Transmit Oscillator
M12	Switch		Channel Selector (Rotary Wafer Type)
M13	Relay		Receive-Transmit
M14	S Meter	0700-70	



TRADE NAME:	Raytheon Model Ray-Tel TWR-4
SUPPLIER:	For Current Address, see Master Index
TYPE SET:	9 Tube Transceiver
POWER SUPPLY:	110 — 120 Volts AC, 60 Cycles (or) 12 Volt Storage Battery
RATING:	61 Watts, .61 Amp. @ 117VAC (Trans.) 51 Watts, .52 Amp. @ 117VAC (Rec.)
TUNING RANGE:	Any 6 CB Channels 1 thru 23

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:
A1 thru A8....GENERAL CEMENT #5097, 8727, 8282
WALSCO #2515
A9 thru A12.. GENERAL CEMENT #8606, 8869, 8606L
WALSCO #2543, 2544, 2588

RECEIVER ALIGNMENT

Connect a VTVM, set to read negative voltage, to point (A).
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator as low as possible consistent with a clear indication on the VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 7 of V3 (Conv.), low side to chassis. (455KC Unmod.)	Any	A1, A2, A3, A4, A5, A6, A7, A8	Adjust for maximum indication.
High side thru .01mfd to pin 7 of V2 (1st Mixer), low side to chassis. (6MC Unmod.)	Any	A9, A10	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis. (27.085MC Unmod.)	11 (27.085MC)	A11	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

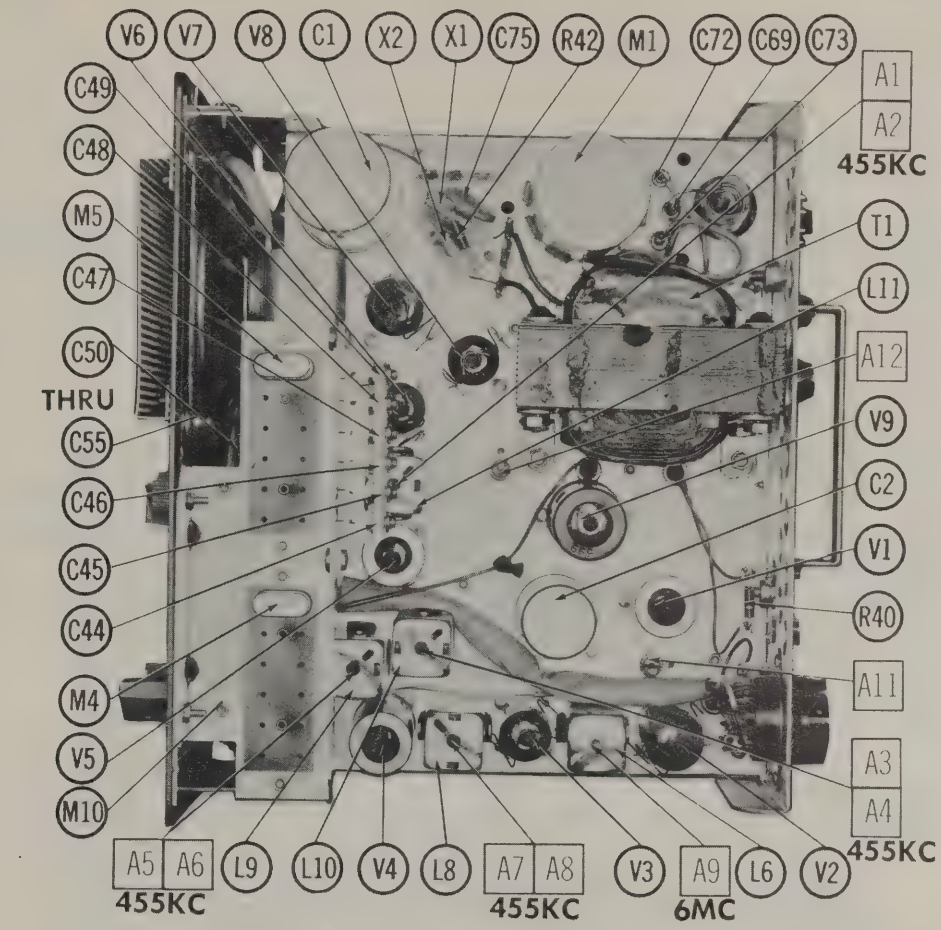
Connect either a 50Ω dummy load or the normally used antenna system. Set channel selector to the usable channel nearest channel 11 (27.085MC).

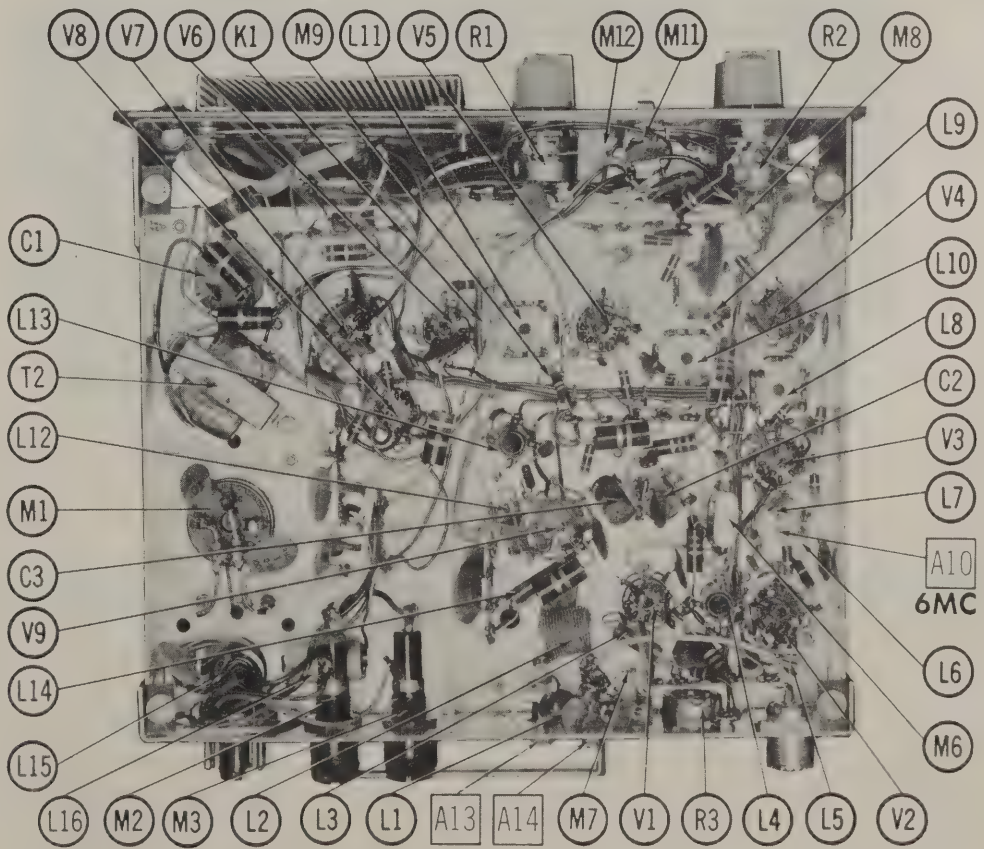
INDICATOR	ADJUST	REMARKS
0-50MA DC Milliammeter connected to "Plate Current" jack on rear of chassis.	A12	Key transmitter. Adjust for maximum indication.
"	A13	Key transmitter. Adjust for MINIMUM indication.
"	A14	Readjust A13 and A14. CAUTION: Do not let current exceed 20MA.

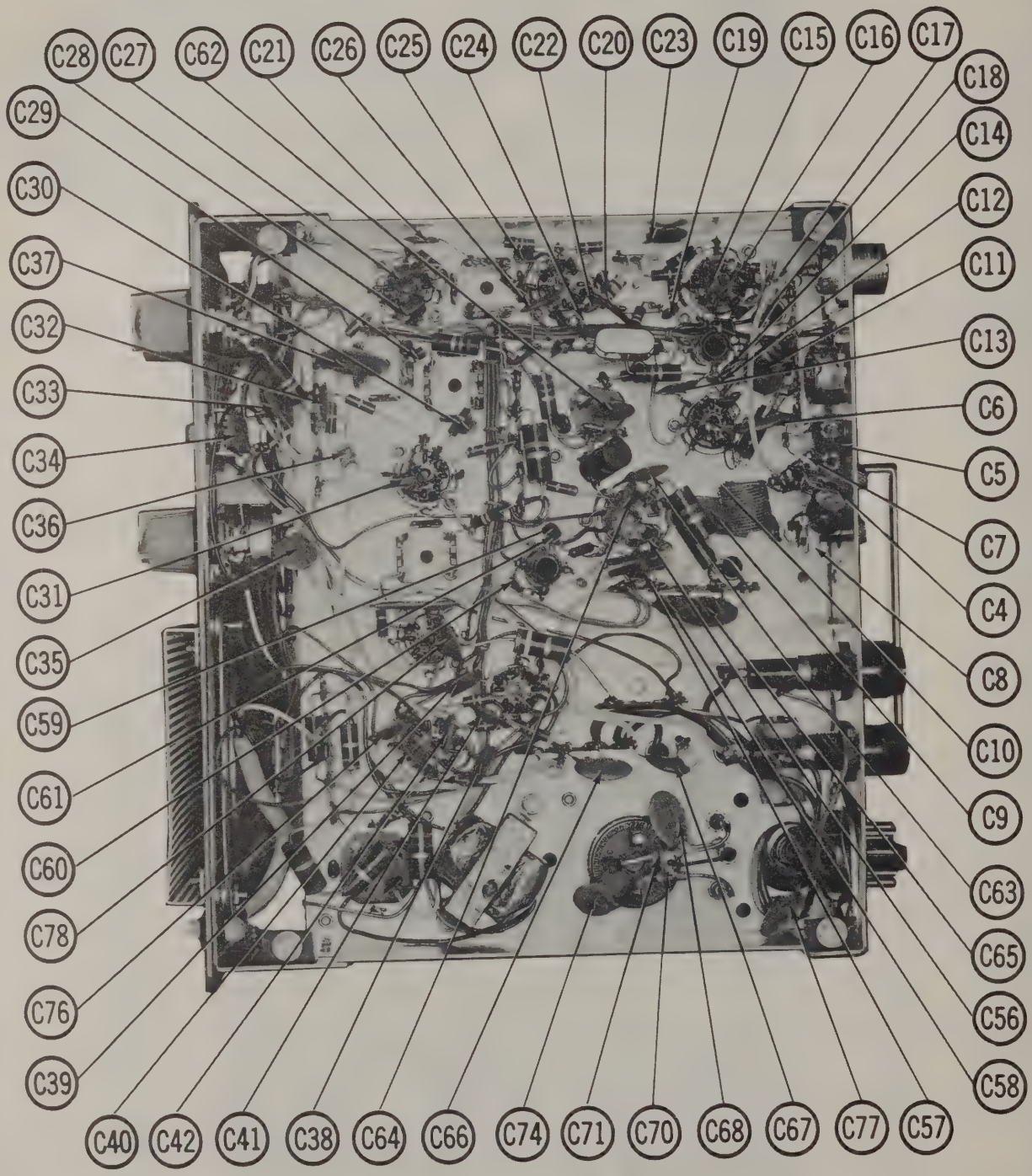
TUNING INDICATOR ZERO ADJUSTMENT:

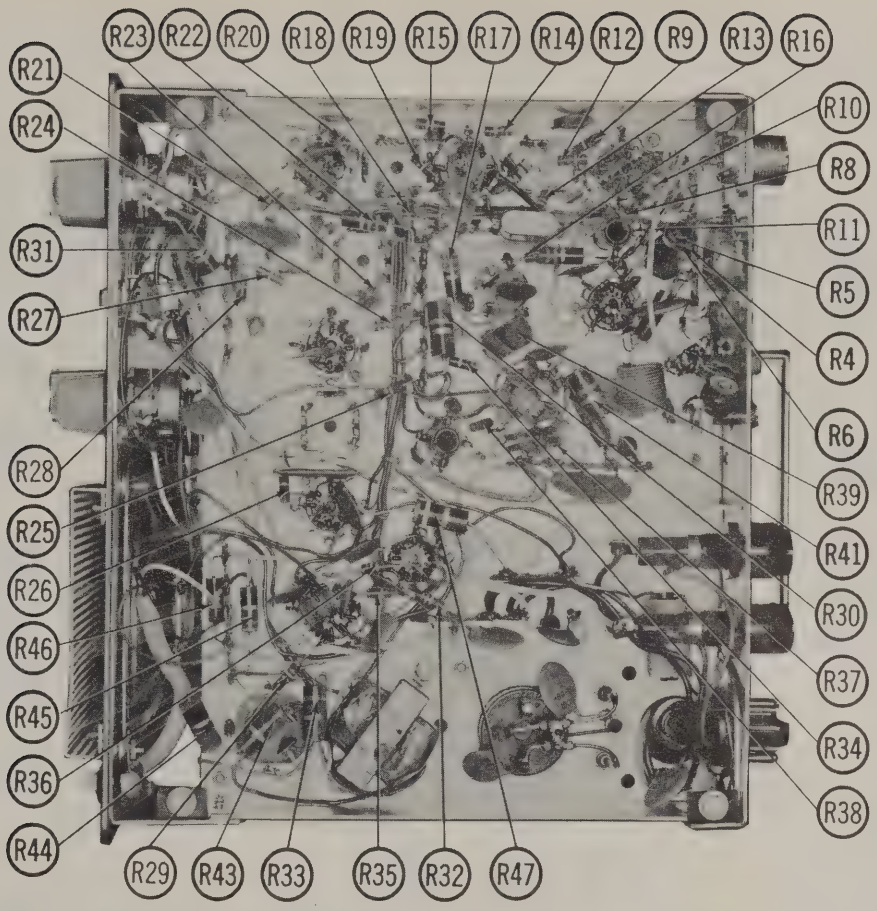
Set meter zero adjust (R3) for zero indication on tuning indicator while receiving normal background noise only.

 © 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY561


V6
V7
V8
C1
X2
X1
C75
R42
M1
C72
C69
C73
C49
C48
M5
C47
C50
THRU
C55
C46
C45
C44
M4
V5
M10
A1
A2
455KC
T1
L11
A12
V9
C2
V1
R40
A11
A3
A4
455KC
A5
A6
455KC
L9
L10
V4
L8
A7
A8
455KC
V3
A9
6MC
L6
V2


V8
V7
V6
K1
M9
L11
V5
R1
M12
M11
R2
M8
L9
V4
L10
L8
C2
V3
L7
A10
6MC
L6
M6
C1
L13
T2
L12
M1
C3
V9
L14
L15
L16
M2
M3
L2
L3
L1
A13
A14
M7
V1
R3
L4
L5
V2


C28
C27
C62
C21
C26
C25
C24
C22
C20
C23
C19
C15
C16
C17
C18
C14
C12
C11
C13
C6
C5
C7
C4
C8
C10
C9
C63
C65
C56
C58
C57
C77
C67
C68
C70
C71
C74
C66
C64
C38
C41
C42
C40
C39
C76
C78
C60
C61
C59
C35
C31
C36
C34
C33
C32
C37
C30
C29



PARTS LIST AND DESCRIPTION

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors
		8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type)
		8237 Low Loss (RG-8/U)
		8240 (Solid) Miniature (RG-58/U)
		8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene)
		8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.	6BH6	V6	AVC-Noise Limiter	6AL5
V2	1st Mixer-1st Rec. Osc.	12AT7	V7	AF Amp. -Speech Amp.	12AX7
V3	Conv.	12BE6	V8	Output-Modulator	12AQ5
V4	1st IF Amp.	6BH6	V9	Transmit Osc. -Final	6CX8
V5	2nd IF Amp.	6BH6			

POWER RECTIFIERS

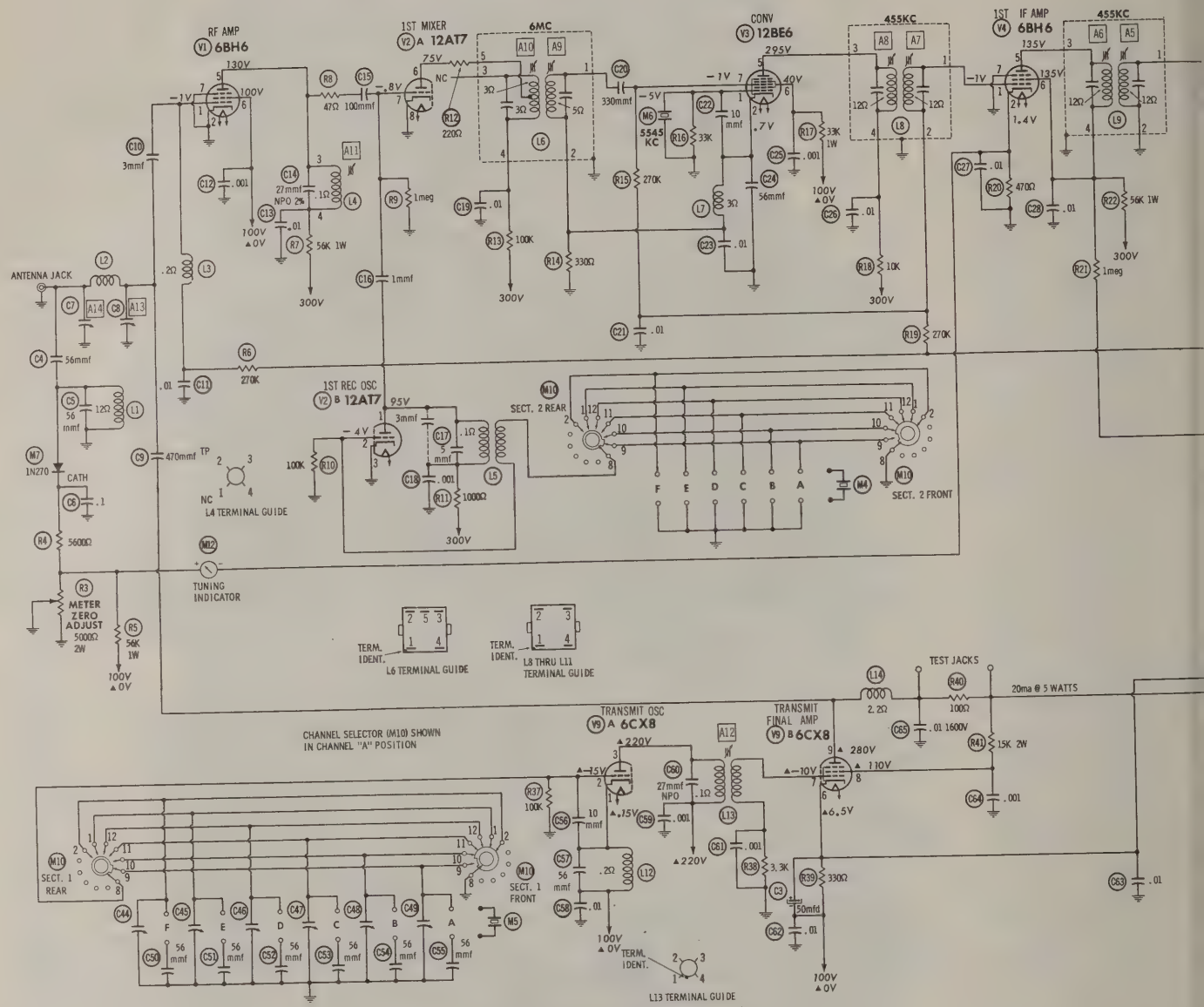
ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.110A	0727-50	1N1096 or 1N3195	1N1764 or 1N2863	60H or F6 ①
X2	.110A	0727-50	1N1096 or 1N3195	1N1764 or 1N2863	60H or F6 ①

① Use 2 Units in Series.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RAYTHEON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲10	450	0546	AFH4-88	D0670	XC4-51	TMQ-4595	FP433	TVL-4753
B	■10	450							
C	▲60	450							
D	20	150							
C2A	■10	450	0535	AFH2-47	BB0400	XC2-3	TMD-2230	FP231	TVL-2750
B	▲10	450							
C3	50	12	102-6320	PRS1265	BR50-25	QT1-15	TD-50-25	TT15X50	TVA-1206

(CONTINUED ON PAGE 134)



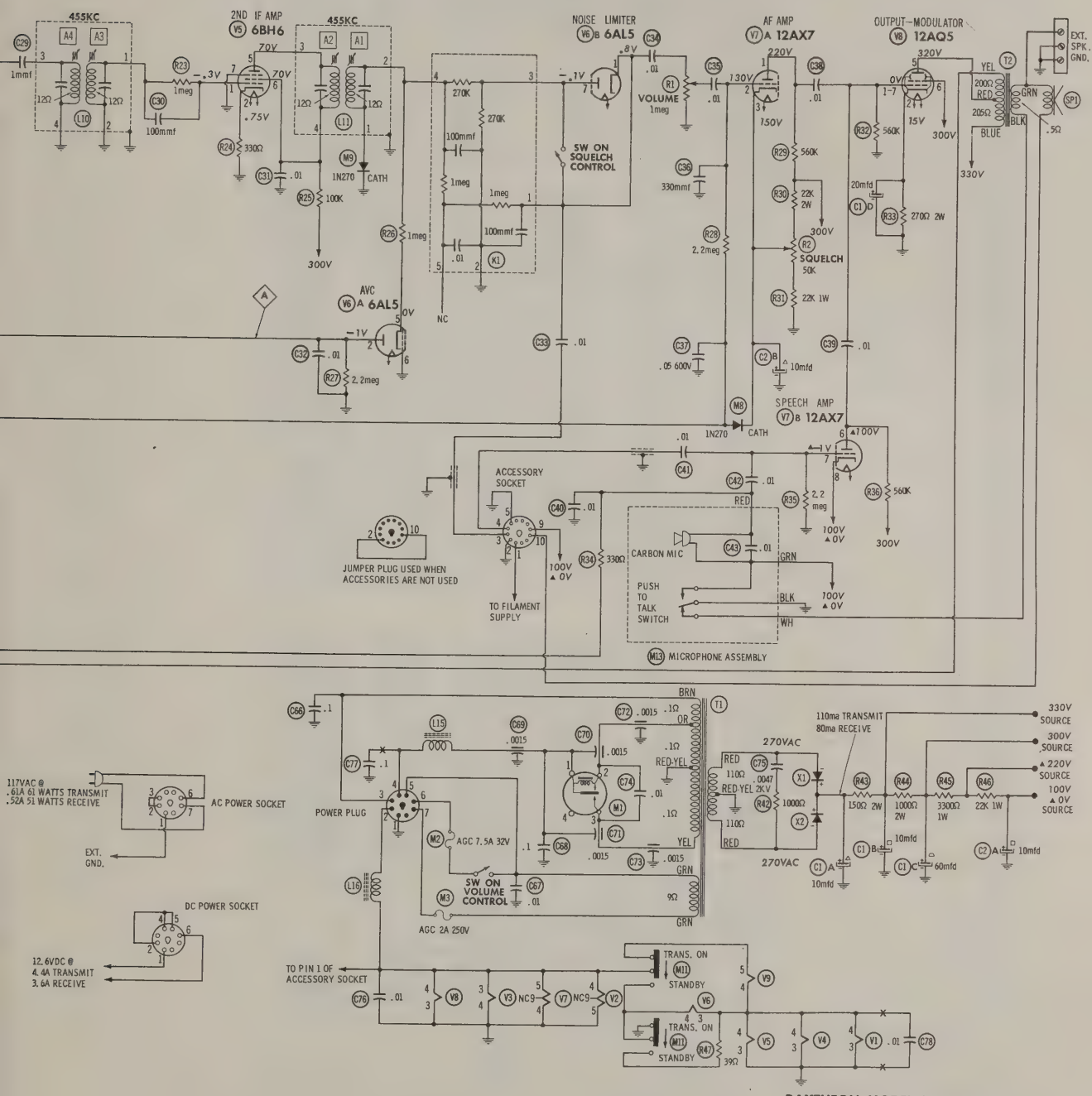
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	2.6meg	0Ω	FIL	FIL	†57K	†26K	0Ω		
V2	12AT7	†27K	100K	0Ω	FIL	FIL	†100K	1meg	0Ω	NC
V3	12BE6	33K	330Ω	FIL	FIL	†11K	†59K	3meg		
V4	6BH6	2.6meg	325Ω	FIL	FIL	†57K	†57K	0Ω		
V5	6BH6	1meg	330Ω	FIL	FIL	†100K	†100K	0Ω		
V6	6AL5	2meg	2.4meg	FIL	FIL	1.1meg	0Ω	140K		
V7	12AX7	†560K	2.2meg	26K	FIL	FIL	†560K	2.2meg	▲0Ω	NC
V8	12AQ5	560K	270Ω	FIL	FIL	†355Ω	††100Ω	560K		
V9	6CX8	▲.2Ω	100K	†6400Ω	FIL	FIL	▲200Ω	3300Ω	†15K	†657Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN TRANSMIT POSITION
† MEASURED FROM OUTPUT OF X1 AND X2.
NC NO CONNECTION.

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964



RAYTHEON MODEL RAY-TEL TWR-4

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C5	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C6	.1 100V		TTD-1	DF-104			TA010	TH-P10
C7		#0554-01						
C8		#0554-01						
C9	470		BPD-00047	DD-471	BYA10T47	CCD-471	B347	10TS-T47
C10	3		DI-3.3	D6-030		CCTO-3R3		
C11	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C12	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C13	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C14	27 NPO 2%			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C15	100		DI-100	DD-101	LA10T1-S3	CCD-101	GP310	5GA-T10
C16	1			TCZ-1				
C17	5		SI 5	D6-050		CCD-050		
C18	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C19	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C20	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C21	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C22	10		DI-10	DD-100	LA10Q1-SL	CCD-100	GP410	5GA-Q10
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C24	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C25	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C27	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C29	1			TCZ-1				
C30	100		DI-100	DD-101	LA10T1-S3	CCD-101	GP310	5GA-T10
C31	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C32	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C35	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C36	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C37	.05 600V			DF-503			GP150	
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C41	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C42	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C43	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C44								
C45								
C46		#0561-68						
C47								
C48								
C49								
C50	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C51	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C52	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C53	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C54	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C55	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C56	10		DI-10	DD-100	LA10Q1-SL	CCD-100	GP410	5GA-Q10
C57	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C58	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C59	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C60	27 NPO			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C61	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C62	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C63	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C64	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C65	.01 1600V		DAC-27	DD16-103	HVE16S1	16DP-3-103	UAC 110	BL-S10
C66	.1 100V		TTD-1	DF-104			TA010	TH-P10
C67	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C68	.1 100V		TTD-1	DF-104			TA010	TH-P10
C69	.0015		EF-1500	FT-1500		CCF-152		
C70	.0015		EF-1500	FT-1500		CCF-152		
C71	.0015		EF-1500	FT-1500		CCF-152		
C72	.0015		EF-1500	FT-1500		CCF-152		
C73	.0015		EF-1500	FT-1500		CCF-152		
C74	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C75	.0047 2KV			DD30-502		3CCD-502		BL-050
C76	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C77	.1 100V	†	TTD-1	DF-104			TA010	TH-P10
C78	.01	†	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

† Not used in some versions.
# Raytheon Part Number.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			RAYTHEON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Power Sw.	1meg	0368	F2-1meg, SU204, KR-1 or (B-70-S)	A47-1meg-Z, RS-2, SWE-12	B13-137, PQ, 76-1 or (BU2, CF26, SS5, GC)*	UA16A, SL2500, US41 or (RU16A, SL38, SL2500, US41) or (U53, US26)
R2	Squelch-ANL Switch	50K	0353	F1-50K, SU204, KR-2 or (B-31, KR-2)	A47-50K-S, FS-3 SWE-20	Q11-123, 76-2, or (BU2, CF12, SS1, WF)*	UA54L, SF1000, US42 or (RU54L, SL38, SF1000, US42) or (U35, US27)
R3	Meter Zero	5000Ω 2W	63-25	V-5000	U39-5000	112-5000	PFL5K

* "SNAPTROL"

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		RAYTHEON PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Meter Take-off						
L2	Final Tank (15 Turns)	0027					
L3	RF Choke (5.6uh)		SW-631	4609	RTC-8519	T959	
L4	RF Plate	0028					
L5	RF Choke (1.5uh)		BC562	4604	RTC-8516	T856	
L6	1st IF (6MC)	0075-20					
L7	RF Choke (27uh)			72F275AP		T984	
L8	2nd IF (455KC)	0074	BC352	12-C30	RTC-8636	T612	
L9	3rd IF (455KC)	0074	BC352	12-C30	RTC-8632	T607	
L10	4th IF (455KC)	0074	BC353	12-C31	RTC-8633	T608	
L11	5th IF (455KC)	0074	BC353	12-C31	RTC-8633	T608	
L12	RF Choke (5.6uh)		SW-631	4609	RTC-8519	T959	
L13	Transmit Interstage	0028-01					
L14	RF Choke (15uh)			4624	RTC-8524	T862	
L15	Hash Choke (46uh)	0020		5240			
L16	Filament Choke (46uh)	0020		5240			

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	SEC. 1	RAYTHEON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC .61A	12.6V DC Input @2.8A	540VCT @.110A	1351-01					
	SEC. 2	SEC. 4	SEC. 5						
	12.6V AC @ 1.6A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	RAYTHEON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	10K CT	3-4Ω	1312-20					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		RAYTHEON PART No.	QUAM PART No.	
SP1	4" PM 3-4Ω		4A1	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RAYTHEON PART NO.	REPLACEMENT DATA
K1	Noise Limiter Net.	(2) 270K, (2) 1meg, (2) 100mmf, (1) .01mfd	0414	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA			NOTES
				RAYTHEON PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	12V	115∿		6301	G1601	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			RAYTHEON PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	AGC	7½A 32V			31107.5	342001	AGC 7½	HKP
M3	AGC	2A 250V			312002	342001	AGC 2	HKP

MISCELLANEOUS

ITEM No.	PART NAME	RAYTHEON PART No.	NOTES
M4	Crystal		Receive (Specify Channel)
M5	Crystal		Transmit (Specify Channel)
M6	Crystal		Converter (5545KC)
M7	Diode		Meter Rectifier (1N270)
M8	Diode		Squelch Gate (1N270)
M9	Diode		Detector (1N270)
M10	Switch		Channel Selector (2-Section 6-Position Rotary)
M11	Switch		Standby (Slide)
M12	Meter	0700-70	Tuning Indicator
M13	Microphone Ass'y.		Includes Push-To-Talk Switch

TRADE NAME: Realistic Model TRC-8D

SUPPLIER: For Current Address, see Master Index

TYPE SET: 8 Tube Transceiver

POWER SUPPLY: 110 — 120 Volts AC, 60 Cycles (or)
12 Volt Storage Battery

RATING: 50 Watts, .5 Amp. @ 117VAC
4.6 Amp. @ 12.6VDC

TUNING RANGE: Any 8 CB Channels 1 thru 23
Receiver may be continously tuned.

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A6	GENERAL CEMENT #5004, 5009, 8195, 8274 WALSCO #2520, 2522, 2532
A7, A8, A9, A12	GENERAL CEMENT #8282, 8806, 8806-L WALSCO #2526, 2543, 2544
A10	GENERAL CEMENT #9090, 8271, 8722 WALSCO #2519
A11, A13, A14, A15	GENERAL CEMENT #5000, 5003, 5066 WALSCO #2515, 2516, 2518

RECEIVER ALIGNMENT

Set Xtal-Tune Switch to Xtal.
Connect DC probe of VTVM to point (A).
Keep output of signal generator at the lowest level consistent with clear indication on VTVM.
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 (grid) of V2 (1st Mixer), low side to chassis (1650KC Unmod.).	Any Unused Channel	A1, A2, A3, A4, A5, A6	Adjust for maximum indication.
High side thru .1mfd to antenna jack low side to chassis (27.85MC Unmod)	11 (27.085MC)	A7, A8	Adjust for maximum indication.
"	"	A9	Adjust for maximum grid voltage on pin 9 of V2B (Rec. Osc.) then back off adjustment 1 turn counterclockwise.
"	"	A10	Set Xtal-Tune switch to Tune and tuning dial to Channel 11. Begin with slug in maximum counterclockwise position and carefully adjust for the first maximum voltage indication on Pin 7 of V2C (Rec. Osc.).
High side thru .1mfd to antenna jack low side to chassis. Tune to channel frequency.	1 (26.965MC) and 22 (27.225MC)	A10, A11	Adjust only if osc. fails to track correctly. Alternately adjust A11 and A10 in small increments for correct tracking.

TRANSMITTER ALIGNMENT

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPART D, SECTION 95.95).

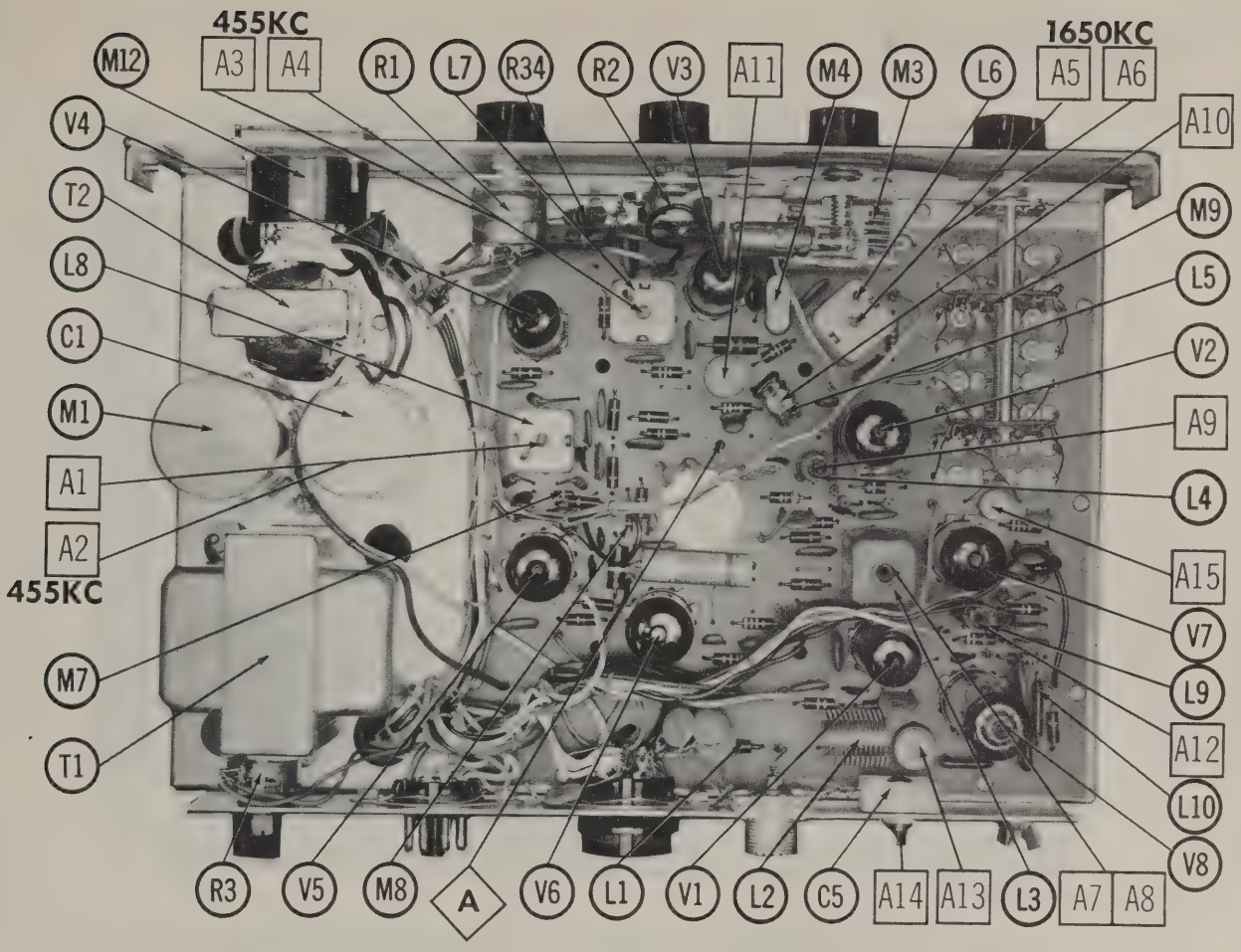
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50Ω dummy load or the normally used antenna system.

INDICATOR	ADJUST	REMARKS
Front panel tuning meter.	A12	Switch meter to "PA" position. Key Transmitter. Adjust for MINIMUM indication. If channels are widely separated, a compromise may be required.
"	A13	Key Transmitter. Adjust for MINIMUM indication.
"	A14	Key Transmitter. Adjust for maximum indication then readjust A13. Output must not exceed 3.25 (5 watts) on lower meter scale.
Frequency meter with tolerance of ± .0025%.	A15	Key Transmitter. Adjust to bring all channels within ± .005% frequency tolerance.

 © 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America



PARTS LIST AND DESCRIPTION

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No.	7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No.	8661 (3/8 In.)

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amplifier	6AU6A	V5	Det. -AVC-Speech Amp.	6CL8
V2	Rec. Mixer-Rec. Crystal Osc. Rec. Variable Osc.	6EZ8	V6	AF Amp. -Output-Modulator	ECL86/6GW8
			V7	Transmit Osc. -Doubler	6CL8 ①
V3	Converter	6BE6	V8	Transmit Final	6GK6
V4	IF Amplifier	6BA6			

① Triode Section not used.

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.090A	4802-2000-012	VB500 (or A300*)	1N3255 or 1N3195	F4
X2	.090A	4802-2000-012		1N3255 or 1N3195	F4

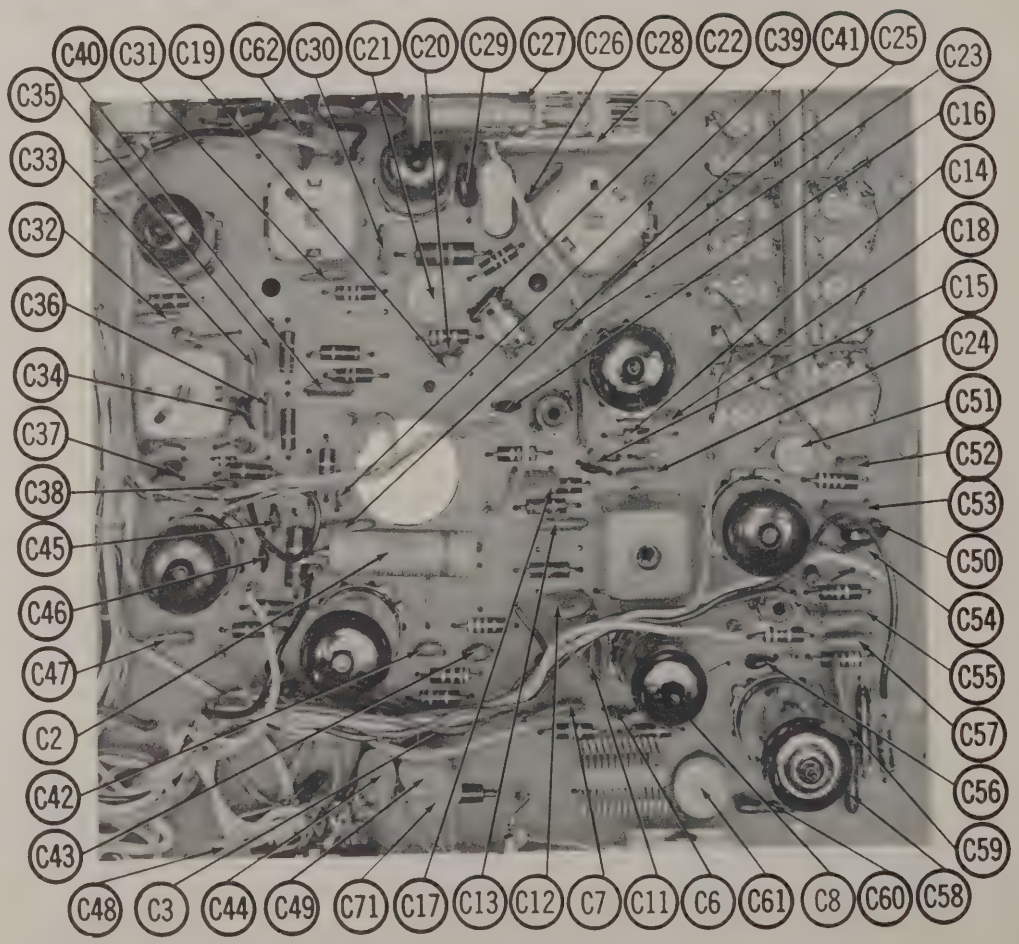
* 2 Units Required.

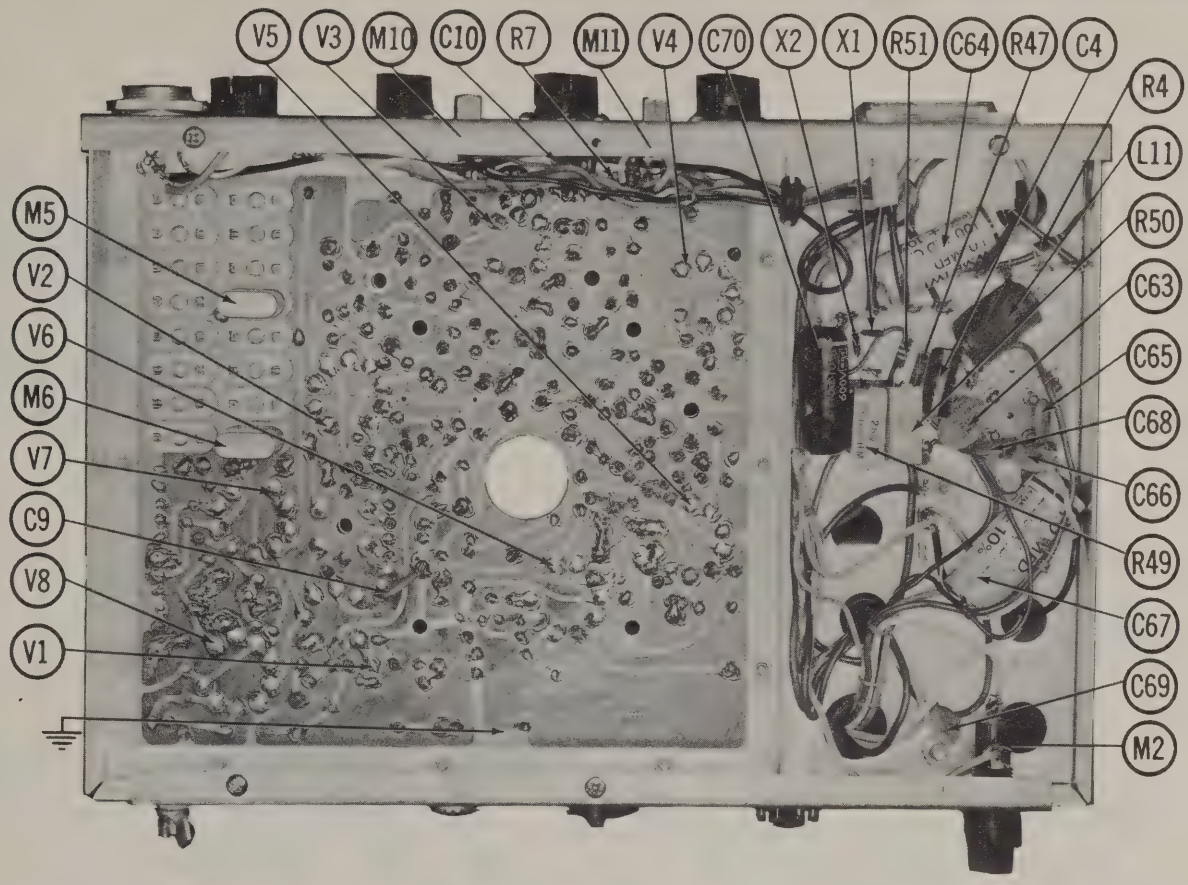
ELECTROLYTIC CAPACITORS

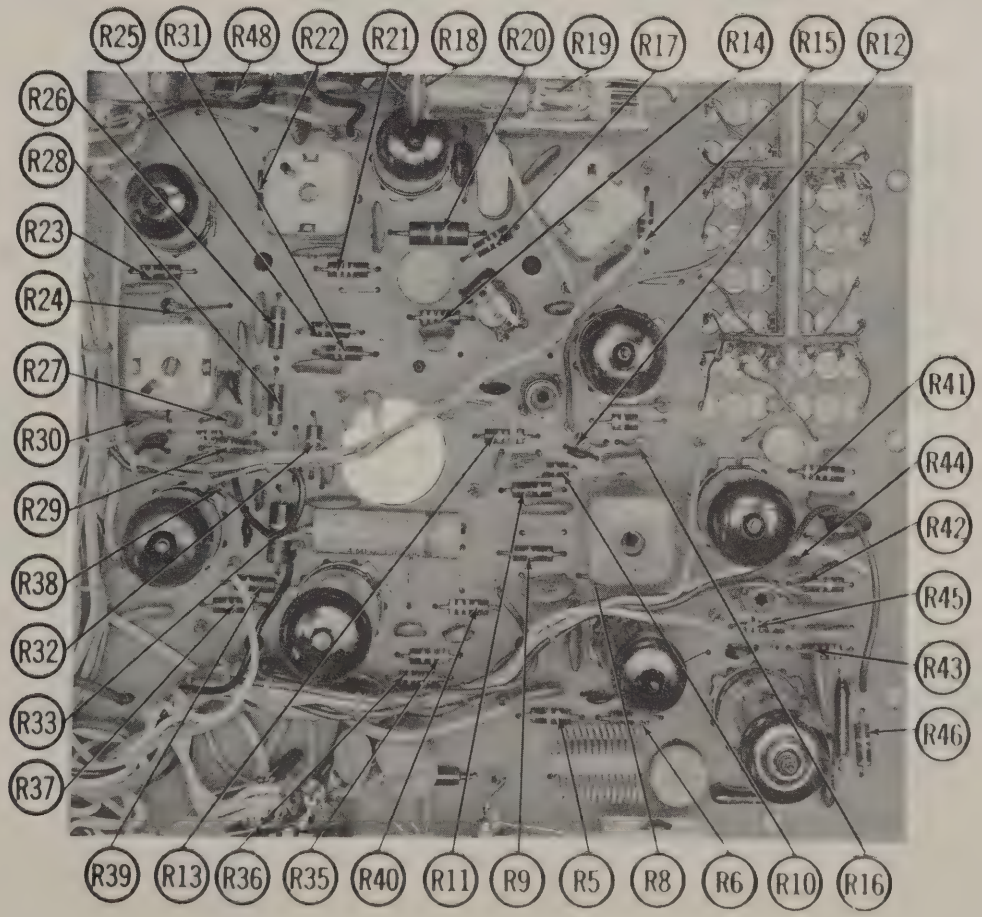
ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	REALISTIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	■20	350	1509-0000-002	AFH4-04	DD0032	XC4-20	TMQ-4295	FP420.35A	TVL-4635
B	▲20	350							
C	▲40	350							
D	10	350							
C2	4	150	1511-0000-006	PRS1400	BBR4-150	MT1-4	TD-4-150	TT150X4	TVA-1402
C3	15	15	1511-0000-007	PTT67	NLW15-15	MT1-10	MLV15-15	TT15X15	TL-1156
C4	10	50	1511-0000-009	PTT92	BBR10-50	MT1-6	MLV10-50	TT50X10	TE-1304

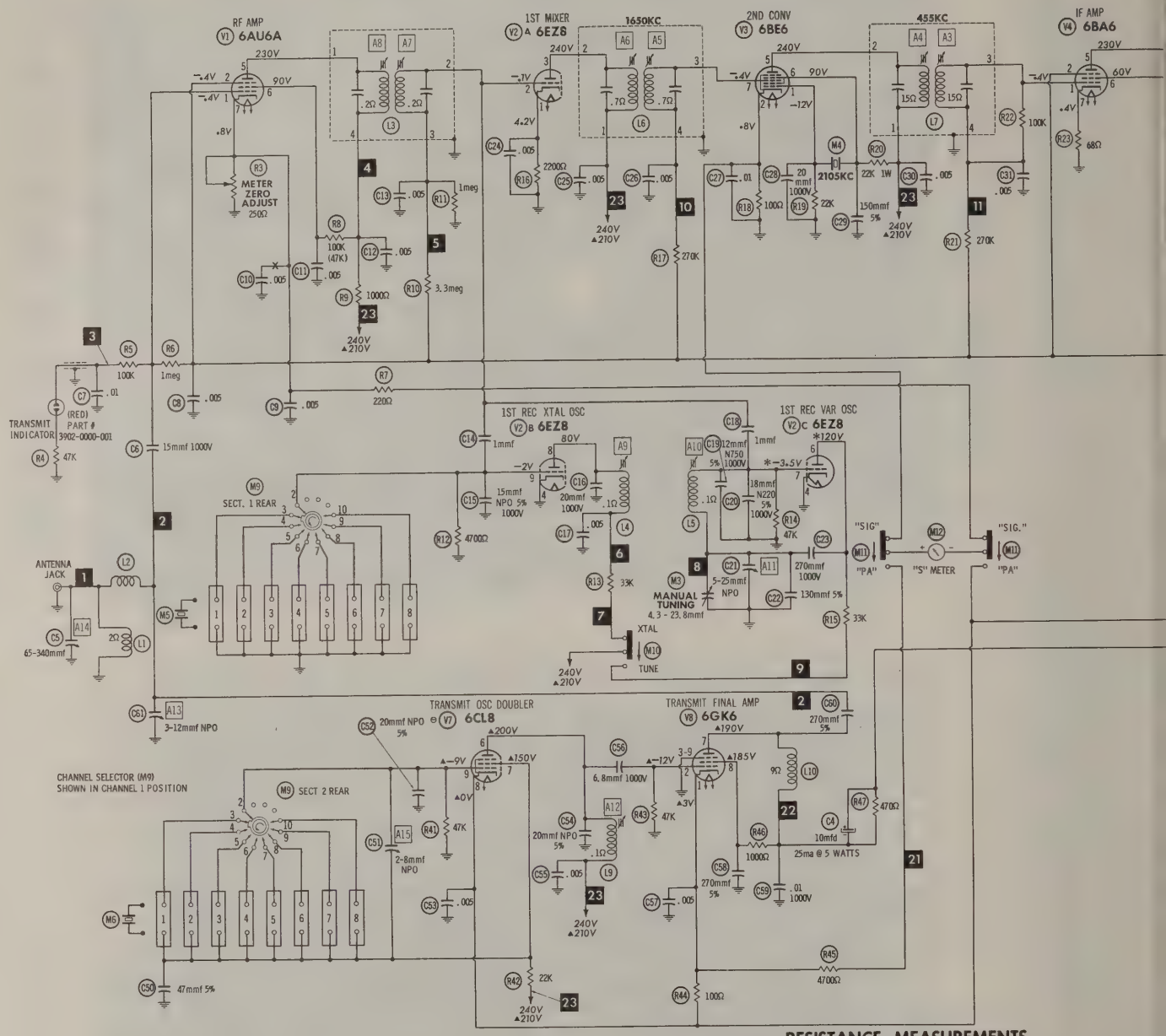
(CONTINUED ON PAGE 142)

9
8
7
6
5
4
23
21
3
22
2
1
10
11
12
18
13
19
15
16
17
14
20


C40
C31
C19
C62
C30
C21
C20
C29
C27
C26
C28
C22
C39
C41
C25
C23
C35
C16
C33
C14
C32
C18
C36
C15
C34
C24
C37
C51
C38
C52
C45
C53
C46
C50
C47
C54
C2
C55
C42
C57
C43
C56
C59
C48
C3
C44
C49
C71
C17
C13
C12
C7
C11
C6
C61
C8
C60
C58


V5
V3
M10
C10
R7
M11
V4
C70
X2
X1
R51
C64
R47
C4
R4
L11
R50
C63
C65
C68
C66
R49
C67
C69
M2
M5
V2
V6
M6
V7
C9
V8
V1


R25
R31
R48
R22
R21
R18
R20
R19
R17
R14
R15
R12
R26
R28
R23
R24
R27
R30
R29
R38
R32
R33
R37
R41
R44
R42
R45
R43
R46
R39
R13
R36
R35
R40
R11
R9
R5
R8
R6
R10
R16



RESISTANCE MEASUREMENTS

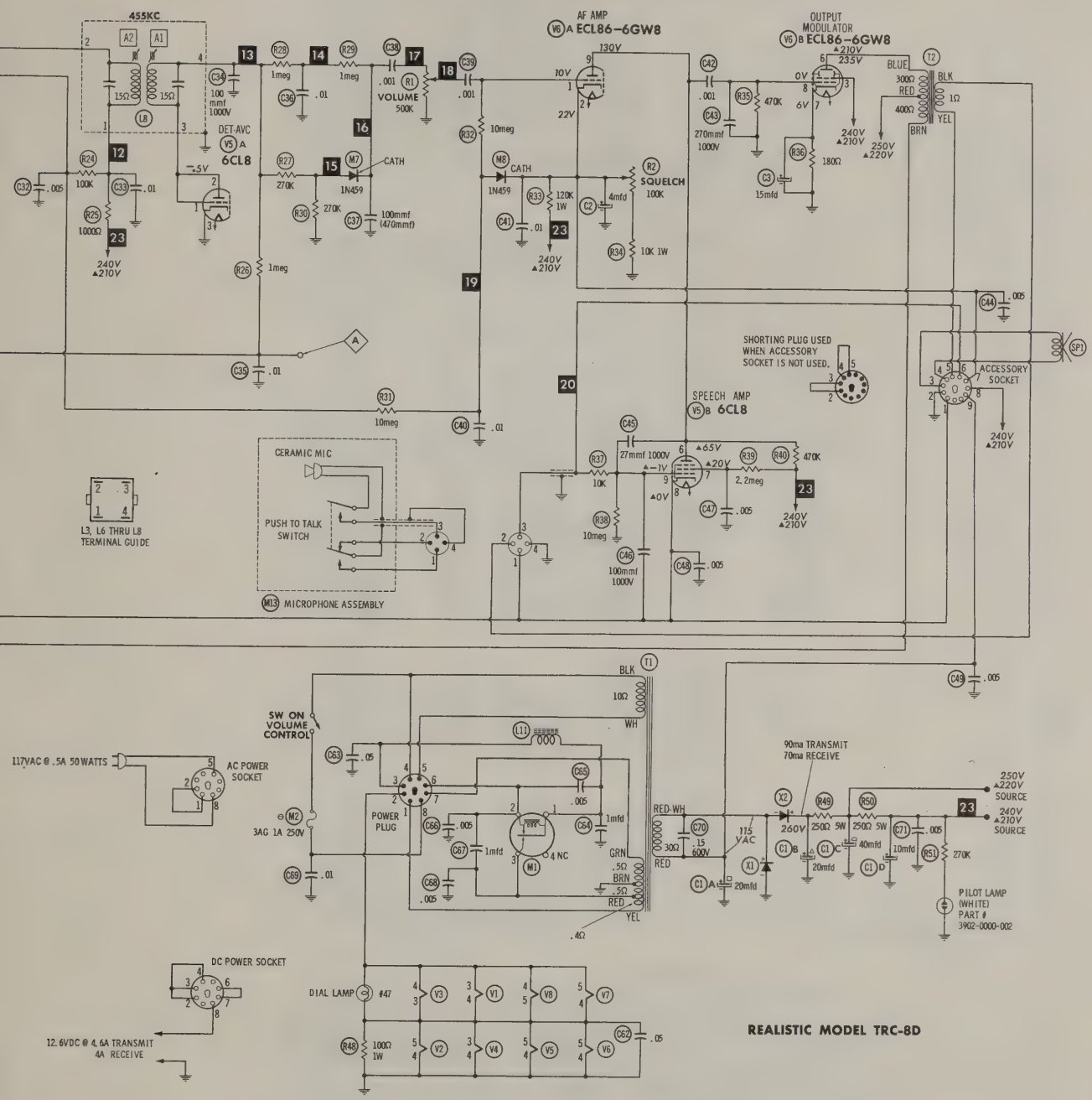
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6AU6A	2.2meg	1.4meg	FIL	FIL	†1500Ω	†100K	125Ω		
V2	6EZ8	2200Ω	800K	†500Ω	0Ω	FIL	†*33K	47K	†33K	4700Ω
V3	6BE6	22K	80Ω	FIL	FIL	†500Ω	†22K	1.4meg		
V4	6BA6	1.4meg	1.2meg	FIL	FIL	†1500Ω	†100K	68Ω		
V5	6CL8	500K	500K	0Ω	FIL	FIL	†470K	†2.2meg	▲0Ω	10meg
V6	ECL86 6GW8	16meg	60K	†500Ω	FIL	FIL	†550Ω	180Ω	470K	†470K
V7	6CL8	NC	NC	NC	FIL	FIL	†500Ω	†22K	▲0Ω	47K
V8	6GK6	▲100Ω	47K	0Ω	FIL	FIL	NC	†▲1100Ω	†▲2100Ω	0Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN "XTAL RECEIVE" POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN TRANSMIT POSITION
* MEASURED IN "TUNE" POSITION
† MEASURED FROM OUTPUT OF X2
NC NO CONNECTION.

⊖ See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE®

©Howard W. Sams & Co., Inc, 1964



REALISTIC MODEL TRC-8D

PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	65-340					303		
C6	15 1000V		DI 15	DD-150	LA10Q15-SL	CCD-150	GP415	5GA-Q15
C7	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C8	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C9	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C10	.005	Note 1	BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C11	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C12	.005		BPD-005	DD-502	BYA10D1	CCD-502	B250	5HK-D50
C13	.005		BPD-005	DD-502	BYA10D1	CCD-502	B250	5HK-D50
C14	1mmf			TCZ-1				
C15	15 NPO 5% 1000V			DTZ-15	C10Q15C		CN0415	10TCC-Q15
C16	20 1000V		DI 20	DD-200	LA10Q2-SL	CCD-200	GP420	5GA-Q20
C17	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C18	1mmf			TCZ-1				
C19	12 N750 5% 1000V						CN7412	10TCU-Q12
C20	18 N220 5% 1000V							10TCR-Q18
C21	5-25 NPO							
C22	130 5%			CPR-130J	CD10F131J	SCDM-10-131J		MS-313
C23	270 1000V		DI 270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T27
C24	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C25	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C26	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C27	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C28	20 1000V		DI 20	DD-200	LA10Q2-SL	CCD-200	GP420	5GA-Q20
C29	150 5%			CPR-150J	CD10F151J	SCDM-10-151J	MCE236	MS-315
C30	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C31	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C32	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C34	100 1000V		DI 100	DD-101	LA10T1-S3	CCD-101	GP310	5GA-T10
C35	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C36	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C37	100	(470) †	DI 100	DD-101	LA10T1-S3	CCD-101	GP310	5GA-T10
C38	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C39	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C41	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C42	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C43	270 1000V		DI 270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T27
C44	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C45	27 1000V	(10) †	DI 27	DD-270	LA10Q27-SL	CCD-270	GP427	5GA-Q27
C46	100 1000V		DI 100	DD-101	LA10T1-S3	CCD-101	GP310	5GA-T10
C47	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C48	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C49	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C50	47 5%			CPR-47J	CD10E470J	SCDM-10-470J		MS-447
C51	2-8 NPO							
C52	20 NPO 5%			DTZ-20	C10Q2C			10TCC-Q20
C53	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C54	20 NPO 5%			DTZ-20	C10Q2C			10TCC-Q20
C55	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C56	6.8 1000V		DI 6.8	DD-6R8	LA10V68-SL	3CCD-6R8	GP568	10TS-V68
C57	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C58	270 5%			CPR-270J	CD15F271J	SCDM-15-271J		MS-327
C59	.01 1000V		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C60	270 5%			CPR-270J	CD15F271J	SCDM-15-271J		MS-327
C61	3-12 NPO							
C62	.05		BPD-05	DD-503	H5	CCD-503	GP150	TG-S50
C63	.05		BPD-05	DD-503	H5	CCD-503	GP150	TG-S50
C64	1mfd 100V		V1161-1		MPY2W1	1DP-5-105	GEM21	2TM-M1
C65	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C66	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C67	1mfd 200V		V2161-1		MPY2W1		GEM21	2TM-M1
C68	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C69	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C70	.15 600V		BE6P15		DPMS6P15	6DP-5-154	GEM6015	6PS-P15
C71	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50

Note 1. Not used in some versions.
† Alternate Value.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			REALISTIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	500K	4703-0000-010	F2-500K,SU204, KR1 or (B-60, KR1)	A47-500K-Z, RS-2,SWE-12	QCB1①, B13-133, TM3, 76-1 or (BU2, CF25, SS5, GC)*	UA55A, SL2500, US41 or(RU55A, SL38, SL2500, US41)
R2	Squelch	100K	4703-0000-011	F1-100K,SU204 or (B-40)	A47-100K-S, RS-3	QCB1①, B11-128, TM3, or (BU2, CF13, SS5, DC1)*	UA15L, SL2500 or (RU15L, SL38, SL2500)
R3	"S" Meter Zero	250Ω	4703-0000-009	F1-300, SK010		B11-201, SK8 or (BU1, CF2, SS6)*	RU22L, SL38, SN1000

① Use QCB1 instead of Tab Mounting Plate in TM3.
* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R49	250Ω 5W	PW5-250	5W-SQ-250		R50	250Ω 5W	PW5-250	5W-SQ-250	

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		REALISTIC PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (10uh)	1807-1001-004	BC566	74F105AP	RTC8522	T860	
L2	Transmit Tank	1806-0000-003					
L3	RF (27MC)	5608-0000-001					
L4	Rec. Xtal. Osc.	1805-0000-004					
L5	Rec. Variable Osc.	1805-0000-005					
L6	1650KC IF	5603-0000-002					
L7	1st 455KC IF	5603-0000-003	BC-356	13-PC1	RTC8641	T614	
L8	2nd 455KC IF	5603-0000-003	BC-357	13-PC2	RTC8642	T615	
L9	Trans. Osc. Plate	1805-0000-004					
L10	Final Plate (22uh)	1807-2201-002		RFC-28	RTC8503	T953	
L11	Hash Choke (30uh)	1808-0000-001					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	SEC. 1	REALISTIC PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .5A	12.6VCT @ 2.8A DC	115VAC @ .105A AC	5604-0000-006					
	SEC. 2								
	12.6VAC @ 1.6A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	REALISTIC PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	10K Tap ① 6000Ω	3-4Ω	5605-0000-004					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		REALISTIC PART No.	QUAM PART No.	
SP1	3" x 5" PM 3-4Ω	1301-0000-002	35A05	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				REALISTIC PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	12.6	115~	5901-0000-002	6371	G 1601	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			REALISTIC PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	1 Amp. 250V	5104-0000-001 ①	2105-0000-007	312001.	342012	AGC 1	HKP
	3AG	10 Amp. 32V	5104-0000-003 ②	2105-0000-007	311010	342012	AGC 10	HKP

① 117VAC Operation.
② 12VDC Operation.

MISCELLANEOUS

ITEM No.	PART NAME	REALISTIC PART No.	NOTES
M3	Tuning Capacitor	1505-0000-006	4.3-23.8mmf
M4	Crystal	2302-0000-002	Receive Converter, Type CR18/U (2105KC)
M5	Crystal		1st Receive Osc. Type CR23/U (order by Channel Number)
M6	Crystal		Transmit Osc. Type CR18/U (order by Channel Number)
M7	Diode (1N459)	4802-2000-006	Noise Limiter
M8	Diode (1N459)	4802-2000-006	Squelch Clamp
M9	Switch	5103-0000-006	Channel Selector (2-Section, 8-Position, Rotary)
M10	Switch	5101-0000-002	Xta.-Tune (SPDT, Slide)
M11	Switch	5101-0000-003	PA-Sig. (DPDT, Slide)
M12	"S" Meter	2903-0000-003	
M13	Microphone Assy.	1302-0000-004	Ceramic Element (Includes Push-To-Talk Switch)

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Knob - Tuning	2402-0000-006
Knob - Volume, Squelch, Channel Selector	2402-0000-002
Dial - Tuning	2403-0000-004
Rubber Feet	2803-0000-005
AC Line Cord Assembly	6002-0000-001

ITEM	PART No.
Printed Circuit Board	7122-7004-701
Bracket - Microphone Mounting	1405-0000-005
Bracket - Mobile Mounting	1405-0000-006
Cabinet	1404-0000-007

TRADE NAME:	Sonar Model G
SUPPLIER:	For Current Address, see Master Index
TYPE SET:	10 Tube Transceiver
POWER SUPPLY:	110 - 120 Volt AC, 60 Cycles (or) 12-Volt Storage Battery
RATING:	65 Watts, .58 Amp. @ 117VAC (or) 4.4Amp. @ 12.6VDC
TUNING RANGE:	Any 8 of CB Channels 1 thru 23 Receiver may be continuously tuned.

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A4, A6, A7..... GENERAL CEMENT #8282, 8606, 8606L
WALSCO #2526, 2543, 2544

A5, A9, A10, A11, A13.... GENERAL CEMENT #8271, 8722
WALSCO #2519

A8, A12, A14, A15..... GENERAL CEMENT #5000, 5003, 5006
WALSCO #2515, 2516, 2518

RECEIVER ALIGNMENT

Connect a VTVM, set to read negative voltage, to point (A), or use front panel "S" meter.
Calibrate signal generator to the necessary channel frequencies by zero beating with another CB transmitter.
Keep the output of the signal generator at the lowest level consistent with a clear indication.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 7 of V4 (Conv. Grid), low side to chassis. (262KC Unmod.)	Any	A1, A2, A3, A4	Adjust for maximum indication.
High side thru .01mfd to pin 6 of V2 (Mixer Grid), low side to chassis. (455KC Unmod.)	Any	A5, A6, A7	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis. (27.085MC Unmod.)	11 (27.085MC)	A8, A9, A10	Set xtal-tune switch to Xtal. Adjust for maximum indication.
"	"	A11	Set xtal-tune switch to Tune. Set Tuning Knob to Channel 11. Adjust for maximum indication.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

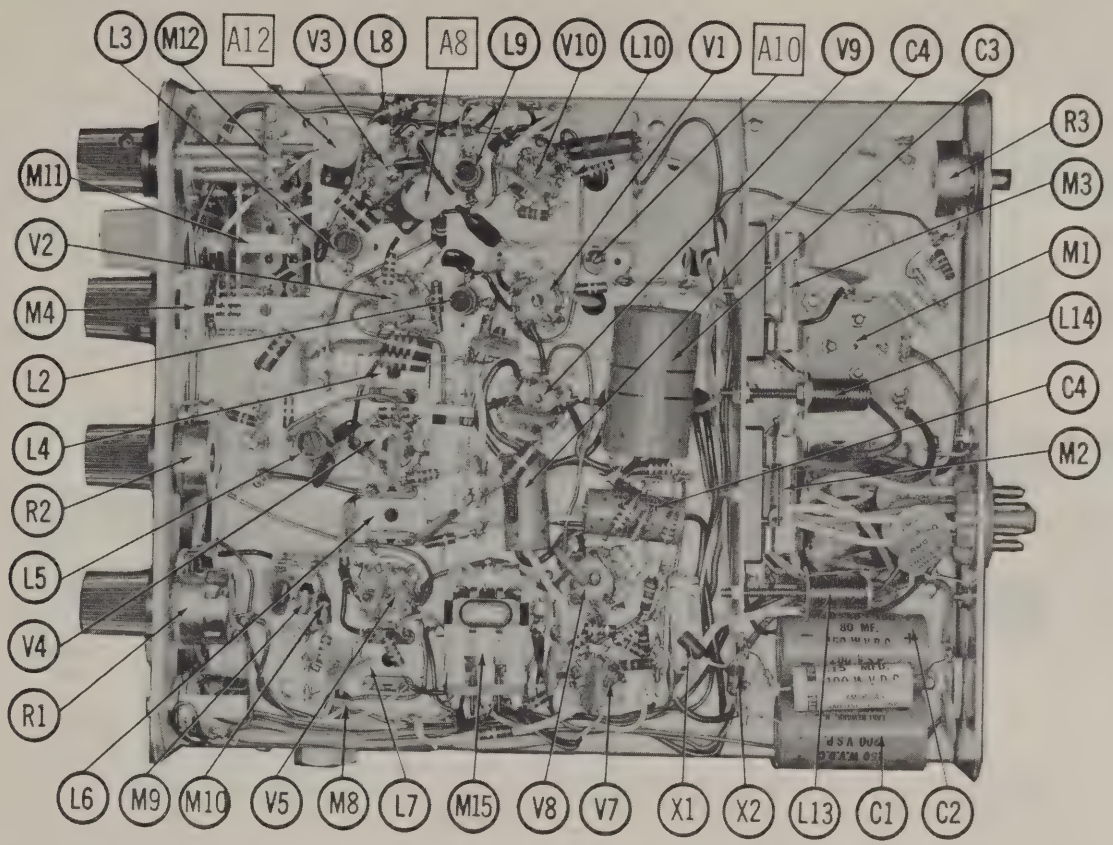
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

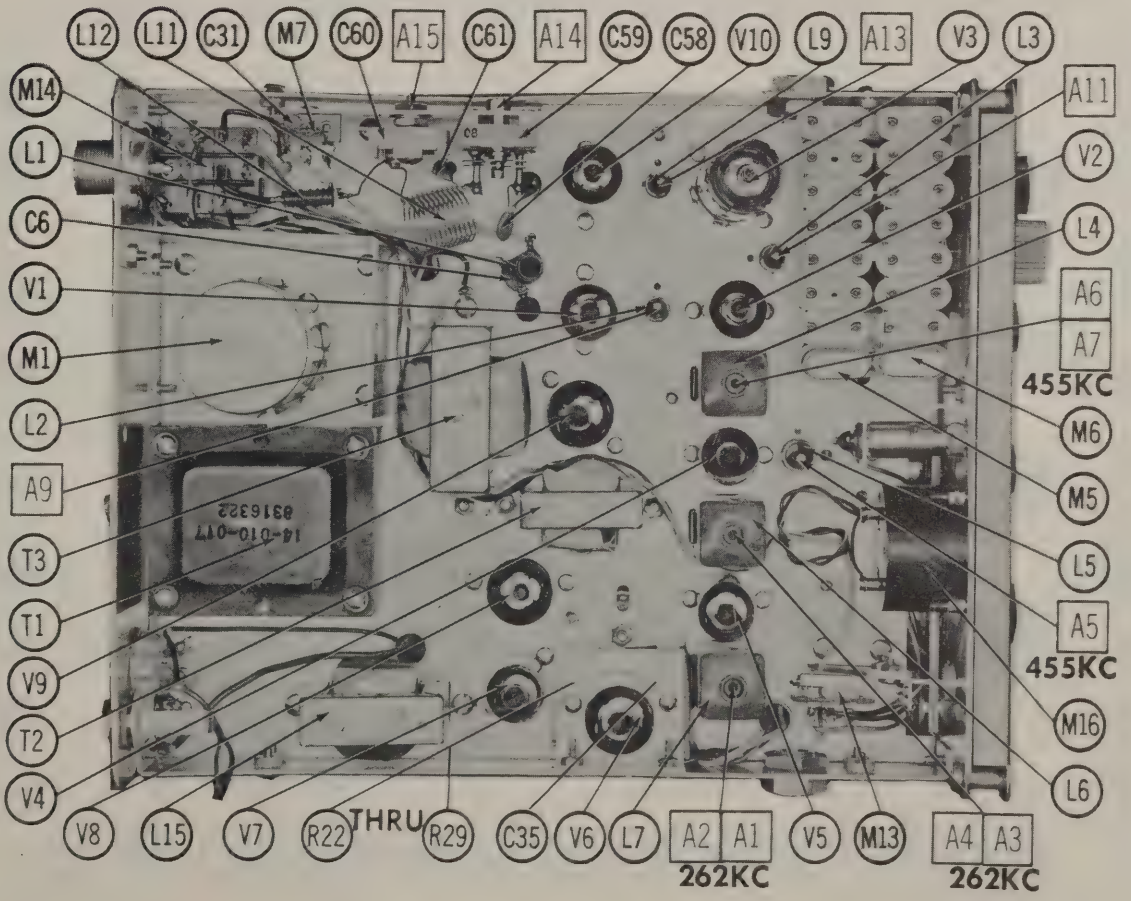
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

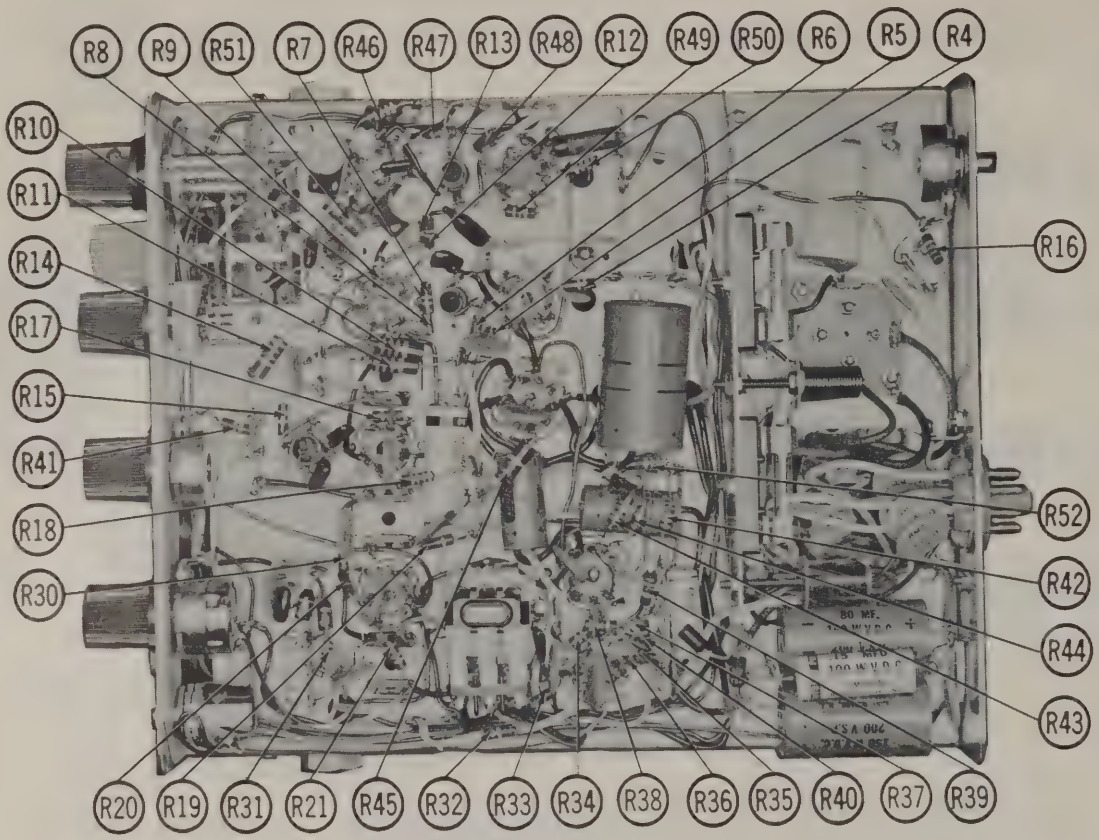
Connect either a 50Ω dummy load or the normally used antenna system. Set channel selector to the nearest usable channel to channel 11 (27.085MC).

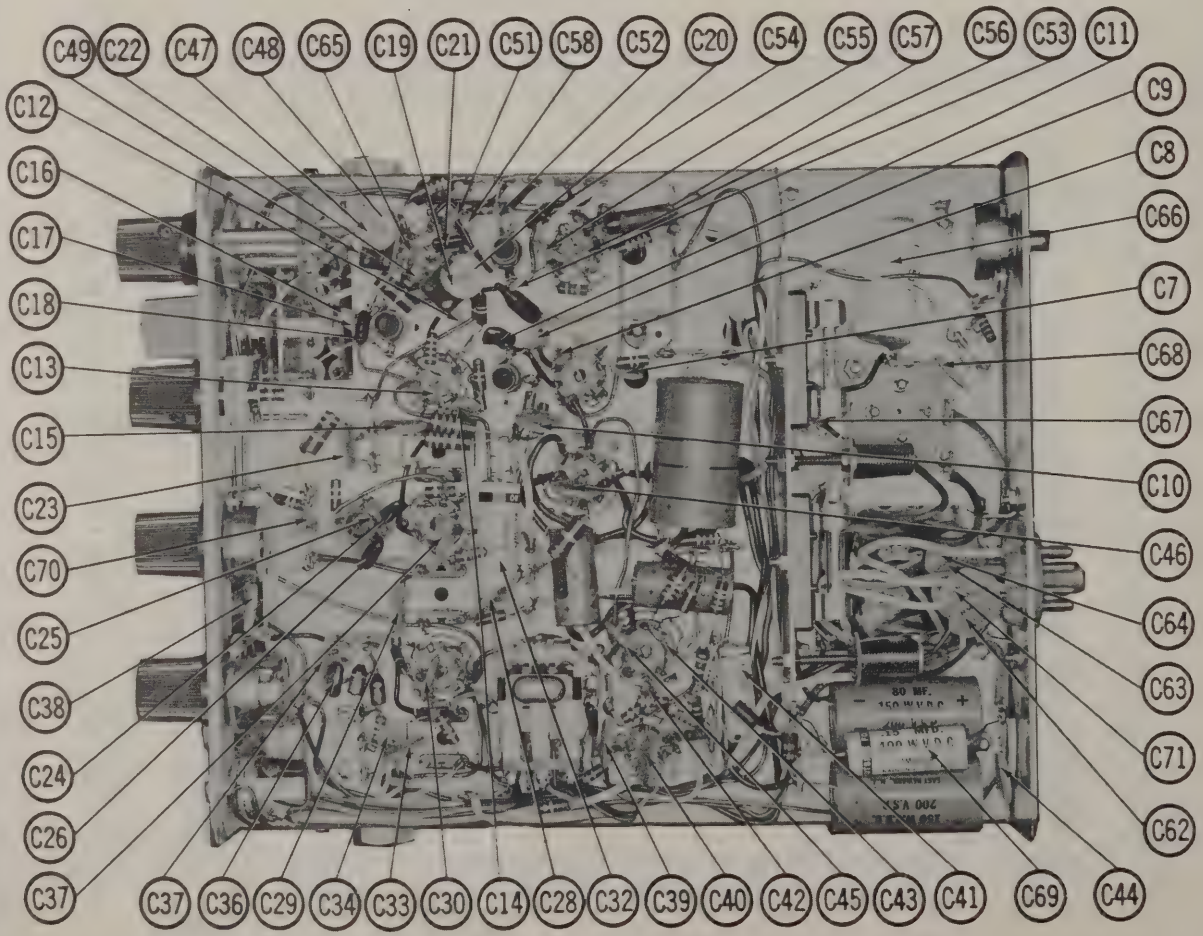
INDICATOR	ADJUST	REMARKS
Field strength meter or front panel "S" meter	A12, A13, A14, A15	Key transmitter. Adjust for maximum indication.

 © 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY527


L3
M12
A12
V3
L8
A8
L9
V10
L10
V1
A10
V9
C4
C3
R3
M3
M1
L14
C4
M2
M11
V2
M4
L2
L4
R2
L5
V4
R1
L6
M9
M10
V5
M8
L7
M15
V8
V7
X1
X2
L13
C1
C2


L12
L11
C31
M7
C60
A15
C61
A14
C59
C58
V10
L9
A13
V3
L3
A11
M14
L1
C6
V1
M1
L2
A9
T3
T1
V9
T2
V4
V2
L4
A6
A7
455KC
M6
M5
L5
A5
455KC
M16
L6
V8
L15
V7
R22
THRU
R29
C35
V6
L7
A2
A1
262KC
V5
M13
A4
A3
262KC


R8
R9
R51
R7
R46
R47
R13
R48
R12
R49
R50
R6
R5
R4
R10
R11
R14
R17
R15
R41
R18
R30
R16
R52
R42
R44
R43
R20
R19
R31
R21
R45
R32
R33
R34
R38
R36
R35
R40
R37
R39


C49
C22
C47
C48
C65
C19
C21
C51
C58
C52
C20
C54
C55
C57
C56
C53
C11
C12
C16
C17
C18
C13
C15
C23
C70
C25
C38
C24
C26
C37
C9
C8
C66
C7
C68
C67
C10
C46
C64
C63
C71
C62
C37
C36
C29
C34
C33
C30
C14
C28
C32
C39
C40
C42
C45
C43
C41
C69
C44

PARTS LIST AND DESCRIPTION

TUBES

ITEM No.	USE	TYPE (◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆)	ITEM No.	USE	TYPE
V1	RF Amp.	12BA6 (6BA6)*	V6	Noise Limiter	12AX7A
V2	1st Mixer	6J6A	V7	Squelch	12AU6 (6AU6)*
V3	1st Rec. Osc. - Transmit Osc.	6AU8A	V8	AF Amp. -Driver	12AT7/ECC81
			V9	Output-Modulator	12BH7A
V4	Conv.	6BE6	V10	Transmit Final	12AQ5 (6AQ5)*
V5	IF Amp.	12BA6 (6BA6)*			

* Used in 6-Volt Models.

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS: MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	93MA	19-040-002	1N2070 or VB400	1N1763 or 1N3194	40H or F4
X2	93MA	19-040-002	1N2070	1N1763 or 1N3194	40H or F4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	SONAR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	80	150	Note 1	PRS1500	BR80-150	QT1-20	TD-80-150	TC492	TVA-1418
C2	80	150	Note 1	PRS1500	BR80-150	QT1-20	TD-80-150	TC492	TVA-1418
C3A	30	350	06-230-001	PRS2410	BBRD2245	QT2-4	TDLD-30	TCD65	TVAS-2732*
B	10	350							
C4	4	10	06-130-004	PRS1400	BBR4-150	QT1-2	TD-4-25	TT50X4	TE-1123
C5	4	10	06-130-004	PRS1400	BBR4-150	QT1-2	TD-4-25	TT50X4	TE-1123

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
Note 1. Some versions use 40mfd, 250V (Part #06-230-002)

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	25 NPO		NPO-DI 25	DTZ-25	C10Q25C	CCTO-270	CNO425	10TCC-Q25
C7	25 NPO		NPO-DI 25	DTZ-25	C10Q25C	CCTO-270	CNO425	10TCC-Q25
C8	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C9	25 NPO		NPO-DI 25	DTZ-25	C10Q25C	CCTO-270	CNO425	10TCC-Q25
C10	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C11	50		1469-00005	TCZ-50	22R5Q5	CM-19B-500K	MCB255	MS-450
C12	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C13	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C14	25 NPO		NPO-DI 25	DTZ-25	C10Q25C	CCTO-270	CNO425	10TCC-Q25
C15	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C16	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C17	25 N750 5%		N750-DI 25	DTN-25	C10Q25U	CCTN-270	CN7427	10TCU-Q25
C18	100	Note 1	ADM-15-101	CPR-100J	CD10F101J	DM-10-101K	MCB235	MS-32
C19	3-12 NPO	#09-610-007		822-FZ			ST553Z	
C20	10 NPO	Note 1	NPO-D1-10	DTZ-10	C10Q1C	CCTO-100	CNO410	10TCC-Q10
C21	100		ADM-15-101	CPR-100J	CD-10F101J	DM-10-101K	MCB235	MS-31
C22	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C24	100		ADM-15-101	CPR-100J	CD10F101J	DM-10-101K	MCB235	MS-31
C25	10 N750 5%	Note 1	N750-DI 10	DTN-10	C10Q1U	CCTN-100	CN7410	10TCU-Q10
C26	300		ADM-15-301	CPR-300J	CD10F301J	DM-10-301K	MCB241	MS-33
C27	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C29	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C30	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C31	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C32	.15 400V		P488N-15		CUB4P15	4DP-4-154	GEM4015	4TM-P15
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C34	470		BPD-00047	DD-471	BYA10T47	CCD-471	B347	10TS-T47
C35	.1 200V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C36	550		ADM-19-561	CPR-560J	CD19F561K	DM-15-561K	MCB247	MS-356
C37	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C38	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C41	.1 200V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C42	150		DI-150	DD-151	L10T15	CCD-151	GP315	10TS-T15
C43	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C44	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C45	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C46	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C47	3-12 NPO	#09-610-007		822-FZ			ST553Z	
C48	3.9	Note 1			C10V4C			10TCC-V39
C49	150	(65mmf) †	DI-150	DD-151	L10T15	CCD-151	GP315	10TS-T15
C50	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C51	10 NPO		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO410	10TCC-Q10
C52	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C53	10 NPO		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO410	10TCC-Q10
C54	2.2		NPO-DI 2.2	TCZ-2R2	C10V22C		CNO522	10TCC-V22
C55	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C56	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C57	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C58	.001 1400V		HVD-15-1000	DD30-102	HVB16D1	3CCD-102	UAC210	BL-D10
C59		#08-150-012						
C60	100-500	#09-210-001						
C61	6.8 NPO	Note 1	NPO-DI 6.8	DTZ-6R8	C10V68C	CCTO-6R8	CNO-568	10TCC-V68
C62	.1 100V				DPMS2P1	1DP-2-104	BT010	TH-P10
C63	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C64	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C65	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C66	1mfd 50V		P288N-1.0		CUB2W1	1DP-5-105	GEM21	2TM-M1
C67	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C68	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C69	.15 400V		P488N-15		CUB4P15	4DP-4-154	GEM4015	4TM-P15
C70	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C71	.1 100V				DPMS2P1	1DP-2-104	BT010	TH-P10

Note 1. Not used in some versions.
† Alternate Value.
# Sonar Part Number.

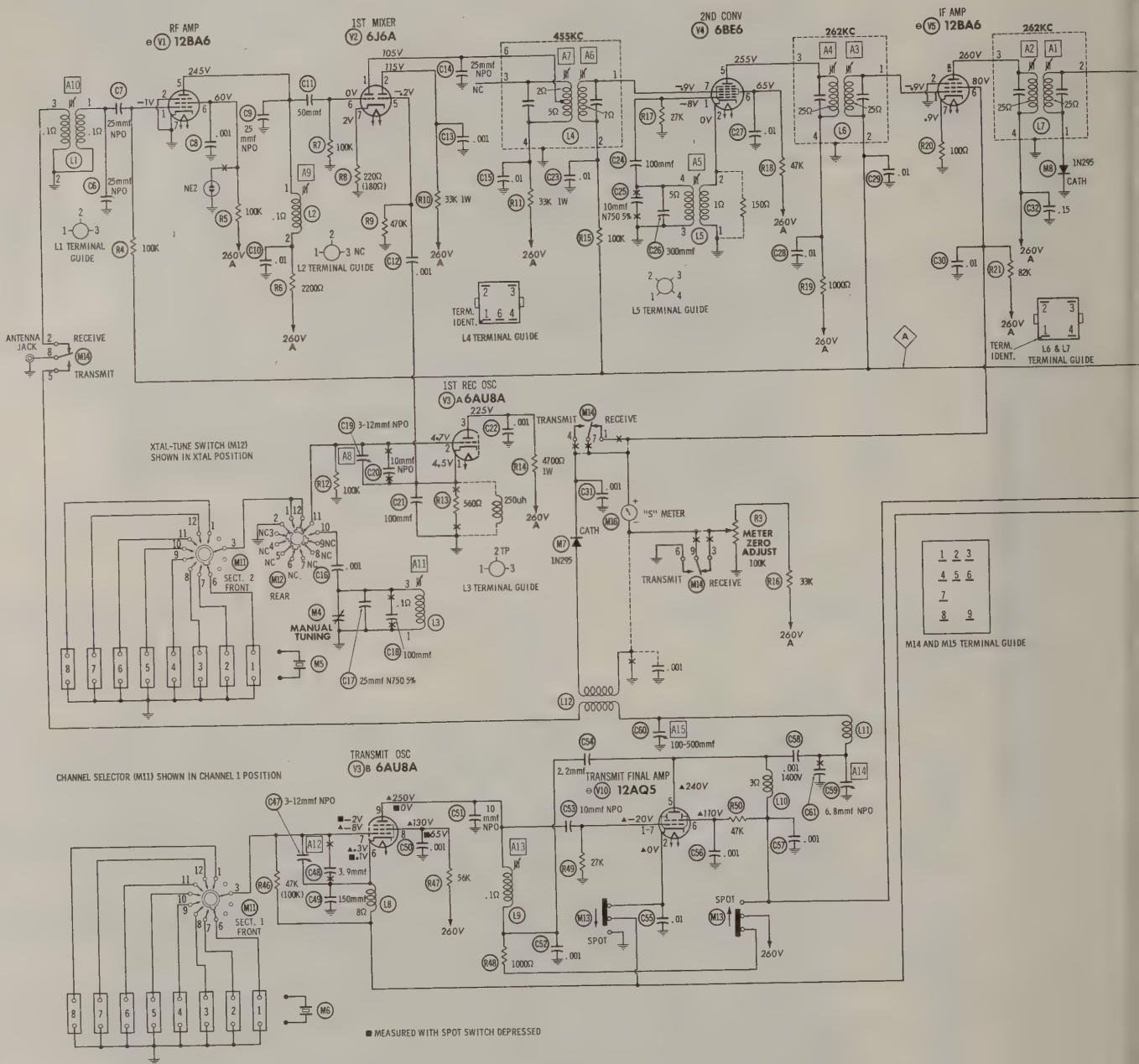
CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	SONAR PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	500K	03-504-018	F2-500K, SF010, KR1 or (B-60-S)	A47-500K-Z, RS-2, SWE12	Q13-133, 76-1, or (BU1, CF25, SS14, GC)*	UA55A, SF1000, US41 or (RU55A, SL38, SF1000, US41) or (U48, US26)
R2	Squelch	500K	03-504-003	F1-500K, SF010, or (B-59)	A47-500K-S, RS-2	Q11-133 or (BU1, CF16, SS14, DC1)*	UA55L, SF1000 or (RU55L, SL38, SF1000) or (U48)
R3	Meter Zero	100K	03-104-026	F1-100K, SRS004 or (B-40)	A47-100K-S, FKS-1/4	B11-128, SK2 or (BU2, CF13, SS2, DC1)*	UA15L, SK1000 or (RU15L, SL38, SK1000, or (U41)

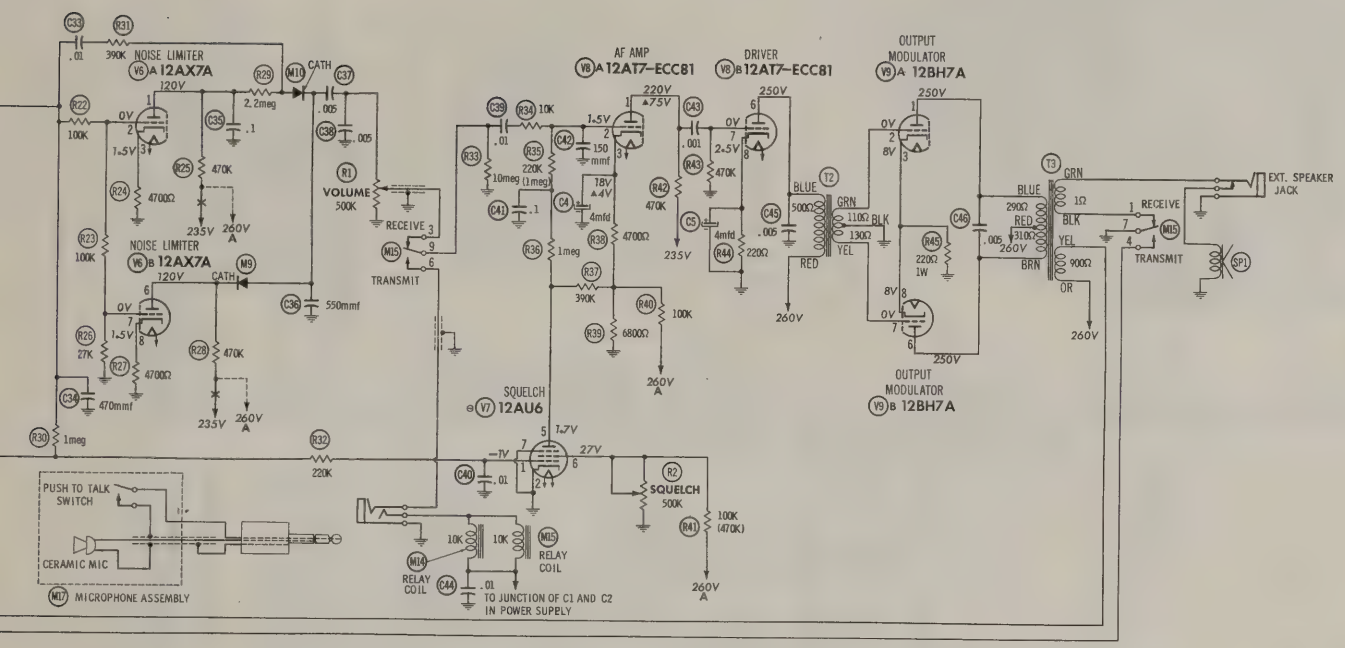
* "SNAPTROL"

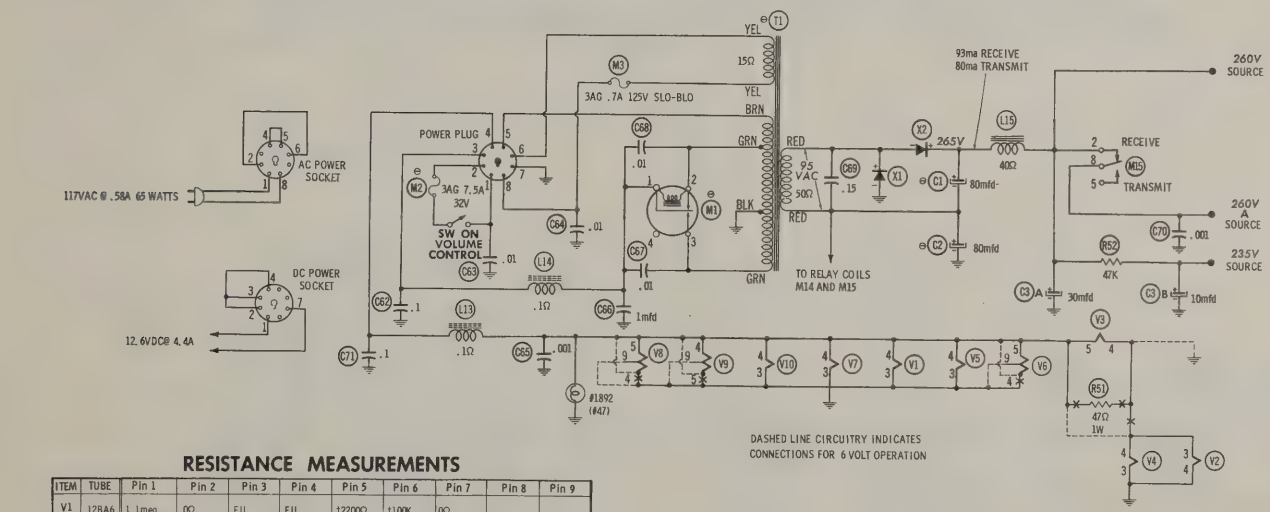
(CONTINUED ON PAGE 150)



⊖ See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964





RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12BA6	1.1meg	0Ω	FIL	FIL	†2200Ω	†100K	0Ω		
V2	6J6A	†33K	†33K	FIL	FIL	470K	100K	220Ω		
V3	6AU8A	560Ω	100K	†4700Ω	FIL	FIL	▲8Ω	▲47K	▲†56K	▲† 1000Ω
V4	6BE6	27K	1Ω	FIL	FIL	†1000Ω	†47K	1.1meg		
V5	12BA6	1meg	0Ω	FIL	FIL	†65Ω	†22K	100Ω		
V6	12AX7A	†470K	100K	4700Ω	FIL	FIL	†470K	27K	4700Ω	NC
V7	12AU6	1.2meg	0Ω	FIL	FIL	390K	†50K	0Ω		
V8	12AT7 ECC81	†520K	1.6meg	10.5K	FIL	FIL	†540Ω	470K	220Ω	NC
V9	12BH7A	†390Ω	110Ω	220Ω	FIL	FIL	†350Ω	130Ω	220Ω	NC
V10	12AQ5	27K	▲0Ω	FIL	FIL	†943Ω	†48K	27K		
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN TRANSMIT POSITION.
† MEASURED FROM OUTPUT OF X2.
NC NO CONNECTION

SONAR MODEL G

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		SONAR PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Antenna	22-030-001	SW-609	6250	RTC-8586	T232A	
L2	RF	22-050-001	SW-608		RTC-8609	T216	
L3	1st Rec. Osc.	22-040-001	SW-608	6171-A	RTC-8609	T216	
L4	1st IF (455KC)	22-010-019					
L5	2nd Rec. Osc. (717KC)	22-040-013					
L6	2nd IF (262KC)	22-010-018	BC-319	14-H1	RTC-8638	T604	
L7	3rd IF (262KC)	22-010-018	BC-351	14-H2	RTC-8639	T605	
L8	RF Choke (250uh)	22-060-001	TV-185	6181	RTC-8598	T315	
L9	Transmit Osc.	22-040-002	SW608	6171-A	RTC-8609	T216	
L10	RF Choke (21uh)	22-060-005	TV-192	6152	RTC-8584	TA311	
L11	Final Tank (11 turns)	22-070-001					
L12	"S" Meter Take-off (7 turns)	22-090-003					
L13	Hash Choke (10uh)	22-100-003	BC-537	5220	RTC-9182	T963	
L14	Hash Choke (10uh)	22-100-003	BC-537	5220	RTC-9182	T963	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	SONAR PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L15	93MA	40Ω	1.5HY	14-070-001					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	SEC. 1	SONAR PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .58A	12VDC @ 2.4A	95VAC @ .3A (AC)	14-010-017 ①					ⓐ Part #14-010-018 used in 6-volt version.
	SEC. 2	SEC. 4	SEC. 5						
	12.6VAC @ 2A								

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	SONAR PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	1	1	14-020-001					

RANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SONAR PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	16K CT	12K	14-050-001					
		SEC. 2						
		3-4Ω						

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		SONAR PART No.	QUAM PART No.	
SP1	3" PM 3-4Ω	36-043-001	30A05	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				SONAR PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	12V	115v	29-030-001	6301	G1601	12 Volt Models
	Interrupter	12V	115v	29-030-002	5301	1601	6 Volt Models

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			SONAR PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	7½A 32V	42-010-014		31107.5	357001	AGC 7½	4405
	3AG	20A 32V	42-010-001*			357001	AGC 20	4405
M3	3AG/SB	7½A 125V	42-010-018		313.700	357001	MDL 7/10	4405

* Used in 6 Volt Versions.

MISCELLANEOUS

ITEM No.	PART NAME	SONAR PART No.	NOTES
M4	Tuning Capacitor	08-100-001	
M5	Receive Crystal		Specify Channel when ordering
M6	Transmit Crystal		Specify Channel when ordering
M7	Diode	19-050-001	Meter Rectifier (1N295)
M8	Diode	19-050-001	Det.-AVC (1N295)
M9	Diode	19-040-001	Noise Limiter
M10	Diode	19-040-001	Noise Limiter
M11	Switch	10-030-002	Channel Selector (2-Section 8-Position Wafer)
M12	Switch	10-030-001	Xtal-Tune Switch (4P2T Wafer)
M13	Switch	10-040-005	Spot Switch (DPDT Slide)
M14	Relay	16-010-001	Transmit Receive (3PDT DC)
M15	Relay	16-010-001	Transmit.Receive (3PDT DC)
M16	"S" Meter	32-010-006	0-1MA Panel Type
M17	Microphone Ass'y.	43-010-013	Includes Push-To-Talk Switch
	AC Power Cable	38-150-001	
	DC Power Cable	38-150-002	

WIRING DATA

General-use Hook-up Wire .... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors

Shielded Antenna Lead ..... Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)

Coiled Microphone Cable ..... Use BELDEN No. 8497 3 Conductor-1 Shielded for Press-to-Talk (Neoprene)
8496 3 Conductor-1 Shielded for Press-to-Talk (Vinyl)

Ignition Noise Suppression .... Use BELDEN No. 7300-Series Spark-Plug Sets

Bonding Strap ..... Use BELDEN No. 8661 (3/8 In.)

TRADE NAME: Webster Model Bandspanner 412

SUPPLIER: For Current Address, see Master Index

TYPE SET: 9 Tube Transceiver

POWER SUPPLY: 110 - 120 Volts AC, 60 Cycles (or)
12 Volt Storage Battery

RATING: 61 Watts, .61 Amp. @ 117VAC (Trans.)
51 Watts, .52 Amp. @ 117VAC (Rec.)

TUNING RANGE: Any 6 CB Channels 1 thru 23

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:
A1 thru A8..... GENERAL CEMENT #5097, 8727, 8282
WALSCO #2515
A9 thru A12..... GENERAL CEMENT #8606, 8869, 8606L
WALSCO #2543, 2544, 2588

RECEIVER ALIGNMENT

Connect a VTVM, set to read negative voltage, to point (A).
Calibrate signal generator to necessary channel frequencies by zero beating with another CB transmitter.
Keep output of signal generator as low as possible consistent with a clear indication on the VTVM.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 7 of V3 (Conv.), low side to chassis. (455KC Unmod.)	Any	A1, A2, A3, A4, A5, A6, A7, A8	Adjust for maximum indication.
High side thru .01mfd to pin 7 of V2 (1st Mixer), low side to chassis. (6MC Unmod.)	Any	A9, A10	Adjust for maximum indication.
High side thru .1mfd to antenna jack, low side to chassis. (27.085MC Unmod.)	11 (27.085MC)	A11	Adjust for maximum indication.

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 95, Subpart D, Section 95.95).

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either a 50Ω dummy load or the normally used antenna system. Set channel selector to the usable channel nearest channel 11 (27.085MC).

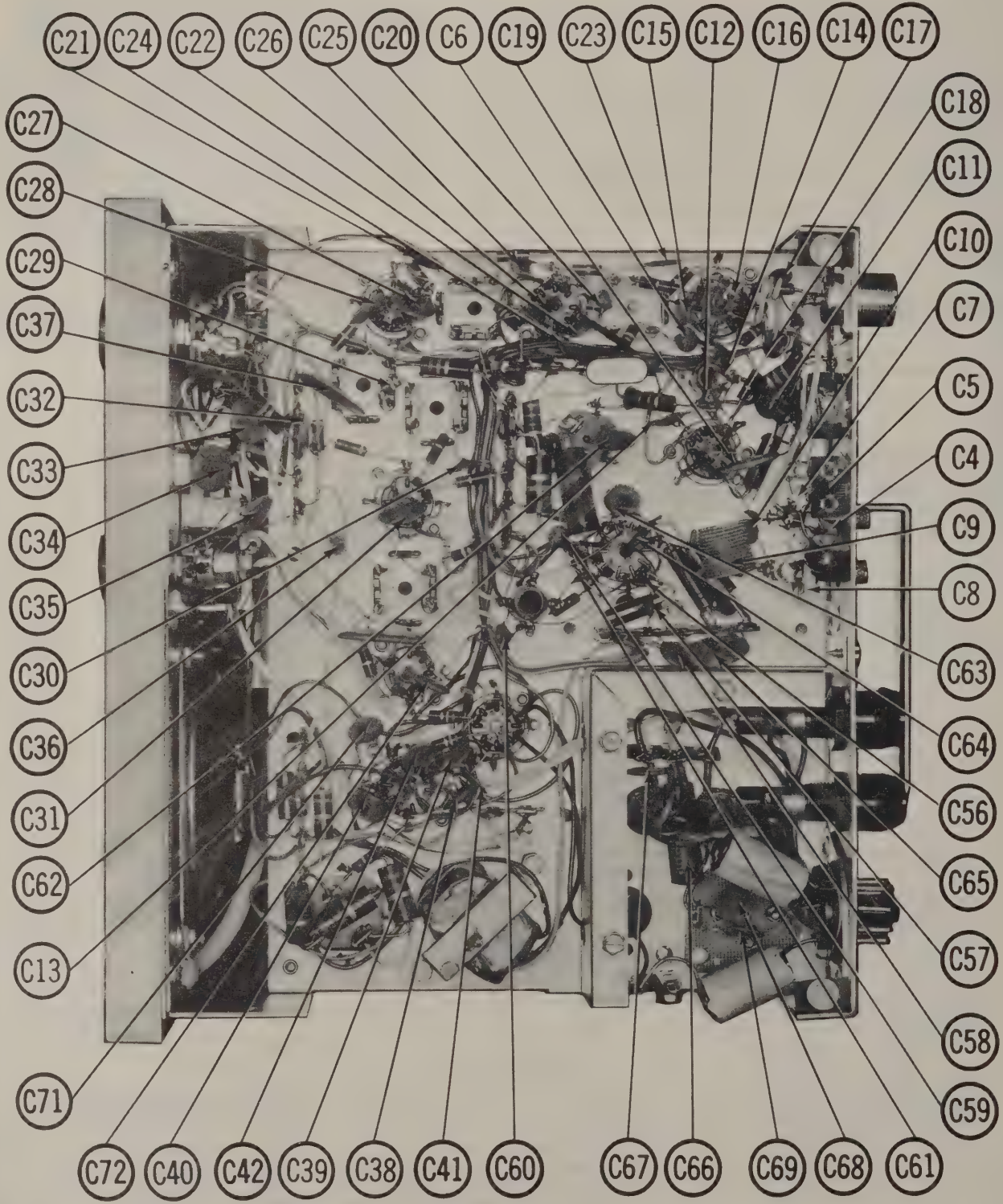
INDICATOR	ADJUST	REMARKS
0-50MA DC Milliammeter connected to "Plate Current" jack on rear of chassis.	A12	Key transmitter. Adjust for maximum indication.
"	A13	Key transmitter. Adjust for MINIMUM indication.
"	A14	Readjust A13 and A14. CAUTION: Do not let current exceed 20MA.

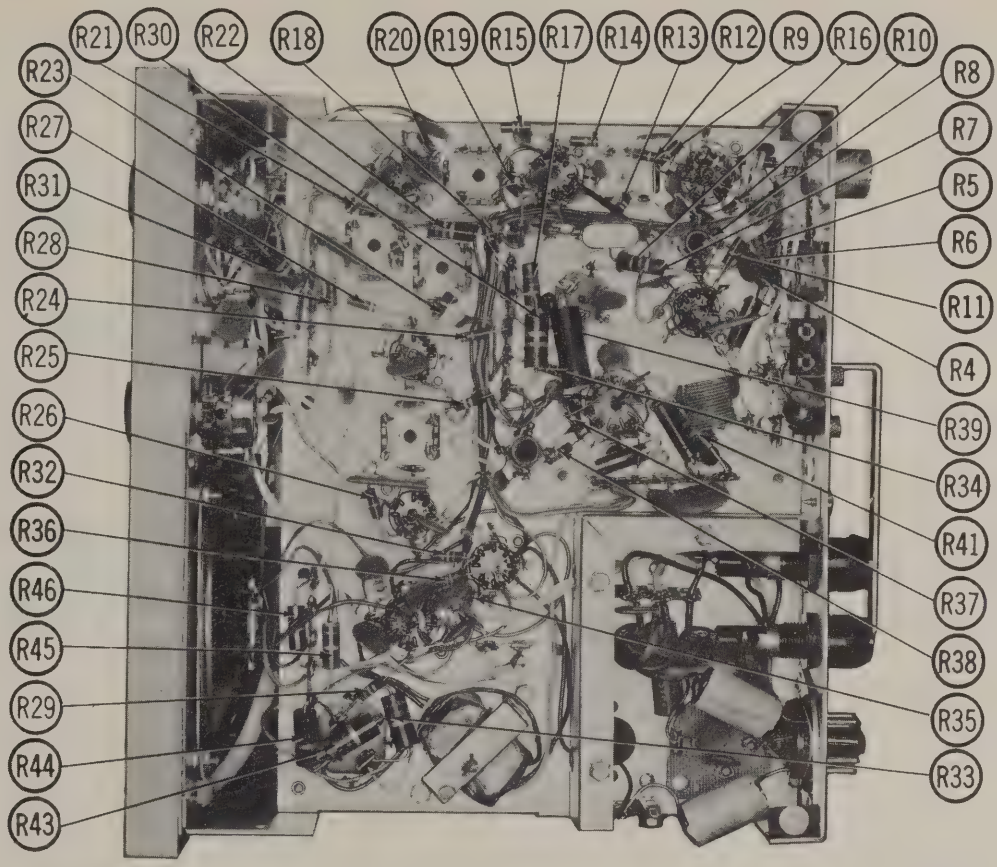
TUNING INDICATOR ZERO ADJUSTMENT

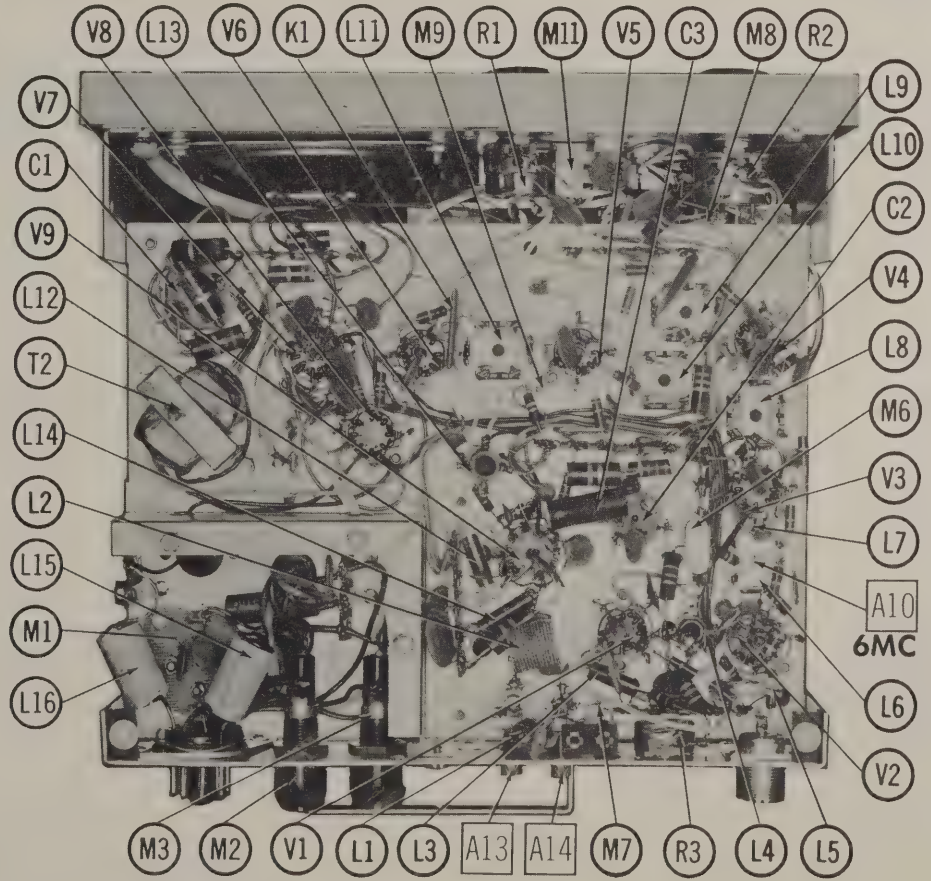
Set meter zero adjust (R3) for zero indication on tuning indicator while receiving normal background noise only.

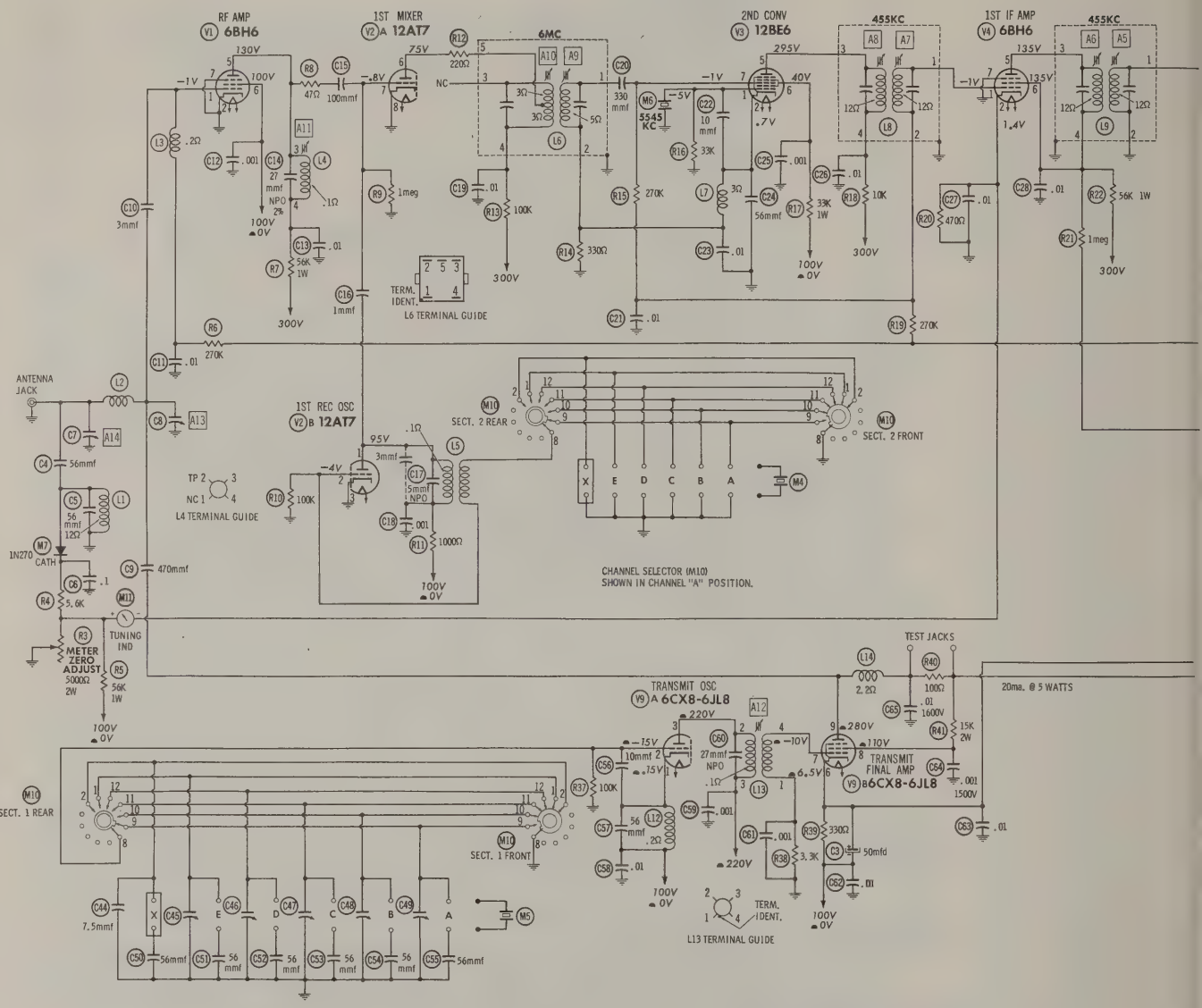
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

© 1964 Howard W. Sams & Co., Inc. Printed in U. S. of America PY528


C21
C24
C22
C26
C25
C20
C6
C19
C23
C15
C12
C16
C14
C17
C18
C11
C10
C7
C5
C4
C9
C8
C63
C64
C56
C65
C57
C58
C59
C61
C68
C69
C66
C67
C60
C41
C38
C39
C42
C40
C72
C71
C13
C62
C31
C36
C30
C35
C34
C33
C32
C37
C29
C28
C27


R21
R30
R22
R18
R20
R19
R15
R17
R14
R13
R12
R9
R16
R10
R8
R7
R5
R6
R11
R4
R39
R34
R41
R37
R38
R35
R33
R23
R27
R31
R28
R24
R25
R26
R32
R36
R46
R45
R29
R44
R43


V8
L13
V6
K1
L11
M9
R1
M11
V5
C3
M8
R2
L9
L10
C2
V4
L8
M6
V3
L7
A10
6MC
L6
V2
V7
C1
V9
L12
T2
L14
L2
L15
M1
L16
M3
M2
V1
L1
L3
A13
A14
M7
R3
L4
L5



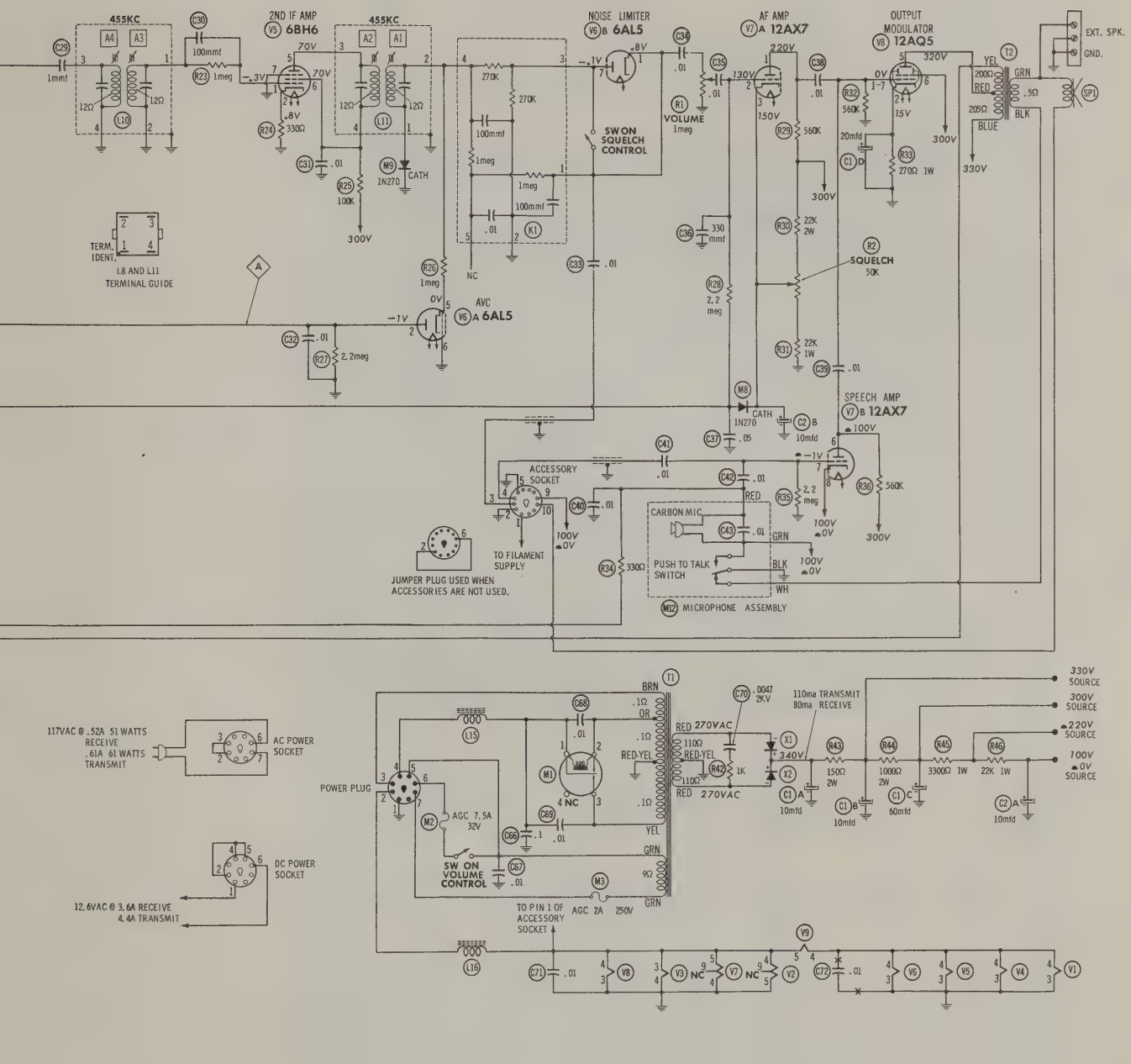
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	2.6meg	0Ω	FIL	FIL	† 57K	† 26K	0Ω		
V2	12AT7	† 27K	100K	0Ω	FIL	FIL	† 100K	1meg	0Ω	NC
V3	12BE6	33K	330Ω	FIL	FIL	† 11K	† 59K	3meg		
V4	6BH6	2.6meg	325Ω	FIL	FIL	† 57K	† 57K	0Ω		
V5	6BH6	1meg	330Ω	FIL	FIL	† 100K	† 100K	0Ω		
V6	6AL5	2meg	2.4meg	FIL	FIL	1.1meg	0Ω	140K		
V7	12AX7	† 560K	2.2meg	26K	FIL	FIL	† 560K	2.2meg	◓ 0Ω	NC
V8	12AQ5	560K	270Ω	FIL	FIL	† 355Ω	† 1100Ω	550K		
V9	6CX8/ 6JL8	◓ .2Ω	100K	† 4400Ω	FIL	FIL	◓ 200Ω	3300Ω	† 15K	† 657Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN "RECEIVE" POSITION UNLESS OTHERWISE DESIGNATED.
◓ MEASURED IN "TRANSMIT" POSITION.
† MEASURED FROM OUTPUT OF X1 AND X2.
NC NO CONNECTION

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1964



WEBSTER MODEL BANDSPANNER 412

PARTS LIST AND DESCRIPTION

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.	6BH6	V6	AVC-Noise Limiter	6AL5
V2	1st Mixer-1st Rec. Osc.	12AT7	V7	AF Amp. -Speech Amp.	12AX7
V3	Converter	12BE6	V8	Output - Modulator	12AQ5
V4	1st IF Amp.	6BH6	V9	Transmit Osc. -Final	6CX8/6JL8
V5	2nd IF Amp.	6BH6			

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.110A	0727-50	1N1096 or 1N3195①	1N1764 or 1N2863	F8
X2	.110A	0727-50	1N1096 or 1N3195①	1N1764 or 1N2863	F8

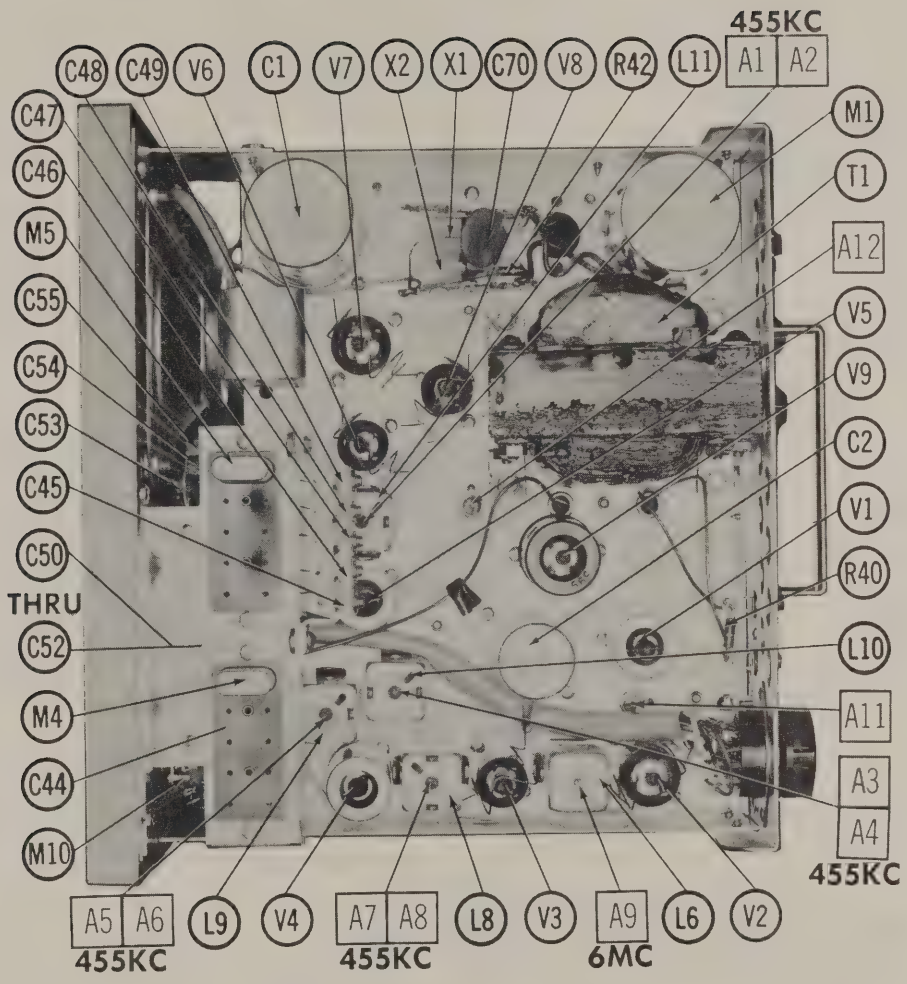
① Use Part #CTP600 to replace X1 and X2.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	WEBSTER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲10	450	0546	AFH4-88	D0670	XC4-51	TMQ-4595	FP433	TVL-4753
B	■10	450							
C	▲60	450							
D	20	150							
C2A	■10	450	0535	AFH2-47	BB0400	XC2-3	TMD-2230	FP231	TVL-2750
B	▲10	450							
C3	50	12	102-6320	PRS1265	BR50-25	QT1-15	TD-50-25	TT15X50	TVA-1206

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C5	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C6	.1 100V		TTD-1	CF-104			TA010	TH-P10
C7		#0554-01						
C8		#0554-01						
C9	470		BPD-00047	DD-471	BYA10T47	CCD-471	B347	10TS-T47
C10	3		DI-3.3	D6-030		CCTO-3R3		
C11	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C12	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C13	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C14	27 NPO 2%			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C15	100		DI-100	DD-101	LA10T1-S3	CCD-101	GP310	5GA-T10
C16	1			TCZ-1				
C17	5 NPO		NPO-DI 5	DTZ-4R7	C10V47C	CCTO-050	CNO547	10TCC-V50
C18	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C19	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C20	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C21	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C22	10		DI-10	DD-100	LA10Q1-SL	CCD-100	GP410	5GA-Q10
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C24	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C25	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C27	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C29	1			TCZ-1				
C30	100		DI-100	DD-101	LA10T1-S3	CCD-101	GP310	5GA-T10
C31	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C32	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C33	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C35	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C36	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C37	.05 600V			DF503			GP150	
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C41	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C42	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C43	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C44	7.5		DI-1-7.5	DD-7R5				5GA-V75
C45								
C46								
C47		#0561-68						
C48								
C49								
C50	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C51	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C52	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C53	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C54	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C55	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C56	10		DI-10	DD-100	LA10Q1-SL	CCD-100	GP410	5GA-Q10
C57	56		DI-56	DD-560	LA10Q56-S3	CCD-560	GP456	5GA-Q56
C58	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C59	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C60	27 NPO			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C61	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C62	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C63	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C64	.001 1500V		DAC-2	DD30-102		3CCD-102	UAC210	BL-D10
C65	.01 1600V		DAC-27	DD16-103	HVE16S1	16DP-3-103	UAC110	BL-S10
C66	.1 200V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C67	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C68	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C69	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10



PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C70	.0047 2KV			DD30-502		3CCD-502		BL-D50
C71	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C72	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

Webster Part Number.
Note 1. Not used in some versions.

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			WEBSTER PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS–IRC PART No.	MALLORY PART No.
R1	Volume, Power Sw.	1meg	0368	F2-1meg, SU204, KR1 or (B-70-S)	A47-1meg-Z, RS-2, SWE-12	Q13-137, 76-1 or (BU2, CF26, SS5, GC)*	UA16A, SL2500, US41 or (RU16A, SL38, SL2500, US41) or (U53, US26)
R2	Squelch, ANL Switch	50K	0353	F1-50K, SU204, KR2 or (B-31, KR2)	A47-50K-S, FS-3, SWE-20	Q11-123, 76-2 or (BU2, CF12, SS1, WF)*	UA54L, SF1000, US42 or (RU54L, SL38, SF1000, US42) or (U35, US27)
R3	Meter Zero	5000Ω 2W	63-25	V-5000	U39-5000	112-5000	PFL5K

* "SNAPTROL"

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		WEBSTER PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Meter Takeoff			72F474AP			
L2	Final Tank (15 turns)	0027					
L3	RF Choke (5.6uh)		SW-631	4609	RTC-8519	T959	
L4	RF Plate	0028					
L5	RF Choke (1.5uh)		BC-562	4604	RTC-8516	T856	
L6	1st IF (6MC)	0075-20					
L7	RF Choke (27uh)			72F275AP		T984	
L8	2nd IF (455KC)	0074	BC-352	12-C30	RTC-8636	T612	
L9	3rd IF (455KC)	0074	BC-352	12-C30	RTC-8632	T607	
L10	4th IF (455KC)	0074	BC-353	12-C31	RTC-8633	T608	
L11	5th IF (455KC)	0074	BC-353	12-C31	RTC-8633	T608	
L12	RF Choke (5.6uh)		SW-631	4609	RTC-8519	T959	
L13	Transmit Interstage	0028-01					
L14	RF Choke (15uh)			4624	RTC-8524	T862	
L15	Hash Choke (46uh)	0020		5240			
L16	Filament Choke (46uh)	0020		5240			

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI. 1	PRI. 2	SEC. 1	WEBSTER PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .61A	12.6VDC Input @ 2.8A	540VCT @ .110A	1351-01					
	SEC. 2								
	12.6VAC @ 1.6A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	WEBSTER PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	10K CT	3-4Ω	1312-20					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		WEBSTER PART No.	QUAM PART No.	
SP1	4" PM 3-4Ω		4A1	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	WEBSTER PART NO.	REPLACEMENT DATA
K1	Noise Limiter Network	(2) 270K, (2) 1meg, (2) 100mmf, (1) .01mfd	0414	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				WEBSTER PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	12V	115~		6301	G1601	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			WEBSTER PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	AGC	7½A 32V			31107.5	342001	AGC 7½	HKP
M3	AGC	2A 250V			312002	342001	AGC 2	HKP

MISCELLANEOUS

ITEM No.	PART NAME	WEBSTER PART No.	NOTES
M4	Crystal		Receive (Specify Channel)
M5	Crystal		Transmit (Specify Channel)
M6	Crystal		Converter (5545KC)
M7	Diode		Meter Rectifier (1N270)
M8	Diode		Squelch Gate (1N270)
M9	Diode		Detector (1N270)
M10	Switch		Channel Selector (2-Section, 6-Position Rotary)
M11	Meter	0700-70	Tuning Indicator
M12	Microphone Ass'y.		Includes Push-To-Talk Switch

WIRING DATA

General-use Hook-up Wire .... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors

Shielded Antenna Lead ..... Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)

Coiled Microphone Cable ..... Use BELDEN No. 8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene)
8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)

Ignition Noise Suppression .... Use BELDEN No. 7300-Series Spark-Plug Sets

Bonding Strap ..... Use BELDEN No. 8661 (3/8 In.)

INDEX

This index lists all radios appearing in
"Citizens Band Manuals" and "PHOTOFACT CB Radio Series"

AIRLINE	Vol.
GAS-587	4

ALLSTATE	
893.62910, 893.62911, 893.62921, 893.62931	6
893.62941	6

APELCO	
AR-9	1

ARKAY	
SQ-9, SQ-9W	2

BENDIX	
CB-6, CB-12	2

CADRE	
500, 500C	3
510	4
510A	6
515	6

CAPITOL	
ND-309	3

CITI-FONE	
CD-5/6	1
CD-5/12	1
CD-6/6, CD-6/12	3

DEWALD	
TR-6, TR-12, TR910	2

DUO COM	
100	2

EICO	
740	4
760, 761W, 762, 762W	2
770, 770W	3
771W, 772W	4

FANON	Vol.
FCB-9	4

GLOBE	
CB-100	1
CB-100A	3
CB-200	2
Globe Master 65-220	6
X-90 (Pocketphone)	1

GONSET	
G-11-3303, -3304, -3305	1
G-12 (3316) (3329)	1
G-14 (3430) (3433)	3
G-15 (3428) (3429)	4

HALLICRAFTERS	
CB-1	1
CB-3	3
CB-3A	5
CB-4 (Littlefone)	3
CB-5A	5
CB-5 Mark II, HA-14, P-5-120	6

HALLMARK	
512	5

HEATH	
CB-1	1
GW-10A/D, GWW-10A/D	3
GW-11A/-11D, GWW-11A/-11D	4
GW-12A/-12D, GWW-12A/-12D	5
GW-21, GWW-21	4
GW-22A/-22D, GWW-22A/-22D	5
GWW-30	2
GW-31, GWW-31	4
GW-32A/D, GWW-32A/D	6
GW-42, GWW-42	6
W-CB-1	1

ITT	
320	3

JOHNSON VIKING	
Messenger II (242-162, 242-163, 250-810, 250-811)	5
Personal Messenger (242-101-1)	2

LAFAYETTE	Vol.
HA-100, HB-111	6
HB-115A	6
HB-222	6
HE-15	1
HE-15B	4
HE-16, -18	1
HE-20AWX	2
HE-20B	4
HE-20C	5
HE-20WX	2
HE-29	2
HE-29A	3
HE-90	5

LA SALLE	
LA-101, 101A	3

MAGNAVOX	
WT101	3

MASCO	
MCB-9	4

MONITORADIO	
TG-1	4

MORROW	
CB-1, -2, -3	1
VP-100-4A	2
5W1-6, -12, -117	1
5W3-6, -12, -117	1

OLSON	
RA-530	5
RA-590	5

OSBORNE	
300	2

PANASONIC	
T-1	5

PEARCE-SIMPSON — Vol.
- Companion — 4
- Companion II — 6
- Escort — 6

PHILMORE
- CC-1, -1W, CT-1, -1W — 3
- TC-11, -11W, TC-612, -612W — 3

POLY-COMM
- PC-2-6, PC-2-12 — 2
- PC-N-6, PC-N-12 — 3
- Senior 23 — 4

RADIOCOM
- 27C-2A/-2B/-2C — 4

RADSON
- RP-115, -612 — 1
- RT-70A, -75A — 1

RAYTHEON
- Raycom — 4
- Raycom-II — 6
- Ray-Tel TWR-1 — 1
- Ray-Tel TWR-2 — 4
- Ray-Tel TWR-3 — 5
- Ray-Tel TWR-4 — 6

RCA
- CRM-P2A-5 — 2
- CRM-P2B-5 (M1-555528, M1-555529) — 1
- CRM-P3A-5 — 1

REALISTIC — Vol.
- TRC-8D — 6
- TRC-27 (94L595) — 1
- TRC-27A — 5

REALTONE
- TR-6134 — 4

REGENCY
- CB-27 — 1
- CBM-27-6, CBM-27-12 — 1
- Range Gain — 5

SAMPSON
- M10, R101A, R102, T110A, VM12-120 — 5

SONAR
- E — 2
- E (Revised) — 4
- G — 6

SONARCOM
- CBP — 2

SONY
- CB-901 — 4

SPOKESMAN — Vol.
- 700 — 2

TRIUMPH
- TC-900, TC-900A — 4

U.S.L.
- TR-800 — 1

UTICA
- MC-27 — 2
- T & C II — 4

VIKING
- 242-126, -127, -128, -129 — 1

VOCALINE
- ED-27-6, ED-27-12, ED-27M-6, ED-27M-12 — 1
- JRC-400, JRC-425 — 2
- PT-27 — 3

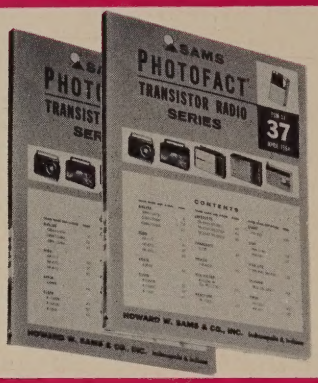
WEBCOR
- ET-350 — 3

WEBSTER
- Bandspanner 412 — 6
- Four-Eleven — 2
- 440 — 5

HOWARD W. SAMS

PHOTOFACT® SPECIALIZED SERIES

TRANSISTOR RADIO SERIES



Twelve to fifteen volumes issued each year provide complete PHOTOFACT® coverage of Transistor Radios. Each volume covers 40 to 50 popular late models. Regular price per volume, $2.95—**only $2.65 when purchased on a Standing Order Subscription! Sign up and save 30¢ per volume!**

AUTO RADIO SERIES

Six to eight volumes per year brings you complete and up-to-date PHOTOFACT® coverage of Auto Radios. Each volume covers 40 to 50 models. Regular price $2.95—**only $2.65 when purchased on a Standing Order Subscription! Sign up and save 30¢ per volume!**

TAPE RECORDER SERIES

Complete PHOTOFACT® coverage of all important, late-model Tape Recorders now in easy-to-use volumes. Regular price, $4.95 per volume—**only $4.65 when purchased on a Standing Order Subscription! Sign up and save 30¢ per volume!**

HOWARD W. SAMS & CO., INC.

PHOTOFACT® SPECIALIZED SERIES
are available from your local parts distributor

$2.95
CB-6